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The Bradshaw Lecture

ENTITLED

CARCINOMA IS A PARASITIC DISEASE.

Delivered before the Royal College of Surgeons of England on Dec. 13th, 1905,

BY HENRY T. BUTLIN, F.R.C.S. ENG., D.C.L.,

CONSULTING SURGEON TO ST. BARTHOLOMEW'S HOSPITAL; VICE-PRESIDENT OF THE COLLEGE.

GENTLEMEN,—It is probable that cancer has been during many centuries regarded as a parasitic disease. To the ancients it presented itself as a loathsome beast, which seized upon the breast, drove its long claws into the surrounding tissues, derived its sustenance by sucking out the juices of its victim, and never even relaxed its hold in death. In those days it was an animal. It is probable that at a later date it presented itself to our forefathers rather as a vegetable and the terms fungous, fungating, and the like, denoted certain conditions of cancer. The likeness of morbid new growths to some of the large parasitic tumours of plants and trees also tended to encourage the belief in the parasitic origin of cancer. The moulds which attack and infiltrate the tissues and organs of certain insects and the larva of insects and gradually replace them, although their form may still be maintained and distinguished, remind us of those cases of cancer in which the walls of hollow organs, such as the stomach, although infiltrated and thickened by the disease, still retain their form as walls. The resemblance of cancerous masses to the masses formed in specific, tuberculous, and other diseases which we now recognise under the general term, the infective tumours—a resemblance so close that it is sometimes impossible to distinguish between cancerous and infective masses—provides another reason for the belief in the parasitic nature of cancer. And the disposition of the secondary growths in the two kinds of disease lends still further colour to the theory. And there are certain parasitic diseases of fish, of the barbel and the pike especially, in which the tumours are almost entirely made up of myxo-sporidia and in which the resemblance to malignant disease is so striking that it is almost impossible to believe that they are not cancerous. It would be easy to multiply reasons, some of them wholly fantastical, some quite sound, for regarding cancer as a parasitic disease, or at least as a disease due to the presence or influence of parasites.

Of course, the parasite has been frequently sought for and, as everyone knows, has not infrequently been found. Now, it is vegetable, of the nature of yeast. Now, it is animal, one of the sporozoa. Anon, it is a bacillus or bacterium. And, again, it is a body of uncertain character which is sometimes presented to us under the name of its creator. Scheuerlin, Darier, Sanfelice, Jackson Clarke, Nils Sjöbring, Sudakevitch, Ruffer, Plimmer, Pfeiffer, and I know not how many clever and distinguished men have believed in the existence of a cancer parasite and have presented it in one form or another to the scientific world, always with the same result down to the discoveries of the last few months. It has been examined, tested, tried, and found wanting, until at length the Director of our Imperial Cancer Research, in the Scientific Report of this year (1905), says: "The parasitic hypothesis has been subjected to severe criticism in practically every textbook of pathology."[1] It might, therefore, be thought that the parasitic theory of cancer should be buried, never again to be unearthed except as a warning to those who come after us of the waste of time and energy which may be incurred by a too obstinate adherence to a preconceived idea. Yet, so strong is the feeling in the minds of many surgeons in favour of the parasitic theory that I confess I experienced a grave sense of disappointment when I found it ruthlessly condemned by our director, particularly as the first issue of the scientific reports last year raised the hope that it might be considered from another point of view.[2]

I am afraid it will be regarded as nothing short of audacity that I should, in the face of the almost unanimous opinion of pathologists, once more insist that carcinoma is a parasitic disease, not in the limited sense in which the term appears to have been used of late as synonymous with infective but in the larger and wider sense in which it used to be, and should always be, employed to express the fact of one organism living at the expense of another organism, each pursuing its otherwise separate and independent existence. The organism which lives upon the other is the parasite and the organism on which it lives is the host, and these terms, which are perfectly well understood, I shall employ. And I shall limit the discussion to carcinoma, not because there appears to me to be an essential difference between sarcoma and carcinoma in relation to the parasitic theory, but to avoid confusion and on account of the much greater attention which has been paid to carcinoma experimentally and because a single lecture is far too small a compass in which to compress a consideration of all and every kind of malignant disease.

Before I go farther I wish to direct attention to some important modifications in the views of cancer pathologists. For many reasons the elements of carcinoma were regarded, until quite recently, and probably are still regarded by many pathologists, as directly derived from the elements of the part in which the carcinoma first appears. It is much more easy to exhibit this in epithelioma than in the other varieties of carcinoma and I show here one of my own drawings, made many years ago, for the purpose of illustrating the transition of the normal into the abnormal processes of carcinoma. It was further believed that, although the growth of carcinoma is chiefly due to the growth and reproduction of its own proper cells, it may also in part be due to transformation of the elements of the normal tissues, similar to the primary transformation out of which the carcinoma had its origin. And there was always doubt regarding the origin of the stroma or framework of carcinoma.

A few years ago, I think Ribbert first maintained, from the examination of much earlier specimens of carcinoma of the skin than had previously been submitted to pathologists, that the microscopic anatomy of continuous sections of these early growths does not support the theory of the derivation of carcinoma from the extension downwards of the normal processes of the epidermis. The very youngest carcinoma of the skin consists of cells which resemble in many respects the cells of the epidermis, and which may lie in contact with the processes of the epidermis but which cannot be shown to be derived from the cells of the epidermis. On the contrary, the cells of the carcinoma may invade the processes of the epidermis, may change their shape by pressure, and may lead to their destruction, but the carcinoma cells are neither transformed into normal cells nor can they be shown to be derived from the normal cells. This view is now held by many pathologists, and is maintained by our director, Dr. E. F. Bashford, and his assistant, Dr. J. A. Murray. To illustrate it I have copied drawings and diagrams of Ribbert and Borrmann for carcinoma of the skin and of Bashford for carcinoma of the tongue.[3] The second modification is even more important and it is also supported by the observations of our research: that the growth of carcinoma depends on the growth and reproduction of its own proper cells and does not depend on transformation of the neighbouring cells into carcinoma cells. Our director confirms this view from the examination of carcinoma of different varieties in different parts of the body. There is no transformation of the normal cells of the adjacent parts, whether these be squamous or columnar or spheroidal. They may be thrust aside by the carcinoma cells, or undermined, or atrophied, or actually destroyed, but they are not transformed. The growth of the disease is due to the multiplication of its own proper elements. There is a third matter on which our director has been working and has made authoritative statement: the origin of the stroma or framework of carcinoma. This has frequently been discussed; but our pathologists have watched its development day by day in carcinoma which has been inoculated. They tell us that it is derived from the connective tissue of the part in which the carcinoma grows, and does not depend on transformation of the carcinoma cells. Whether the stroma

[1] Bashford: Scientific Reports, Imperial Cancer Research Fund, No. 2, 1905, p. 81.

[2] Bashford: Scientific Reports, No. 1, p. 34, and note.

[3] In this connexion it is very interesting to study the third plate of Thiersch's atlas, which is intended to show the origin of cancer of the skin from the processes of the epidermis. Two of the figures show precisely the same relation of the growth to the surface epithelium as that which is exhibited in Ribbert and Borrmann's drawings and might be used for their purpose. But it either had escaped the observation of Thiersch or had been differently interpreted by him.

is formed as a result of "irritation" produced by the presence and progress of the disease; whether it is disposed and arranged in this manner or in that manner in obedience to an influence exercised by the carcinoma cells, as was suggested many years ago by Ballance and Shattock,[4] I do not know.

It suffices for my purpose that modern observation, under the most favourable conditions, shows that there is no transformation of normal cells into carcinoma cells in the course of the growth of the disease and that the stroma is not developed from the cells of the carcinoma. And for the present there is no direct evidence that the cells of the youngest carcinoma are derived from the cells of the part in which it first appears. On these and other grounds which I will presently mention I shall maintain that the carcinoma cell is an independent organism, like many a protozoon; that it lives a life which is wholly independent and proper to itself; and that it lives as a parasite in the body of the animal which is affected with carcinoma, deriving its nourishment from the host and doing nothing to repay the host for the sustenance of which it robs him. See what the cell is like. It presents itself to us as a mass of protoplasm, sometimes, but not always, surrounded by a membrane and containing a nucleus. The nucleus and the body of the cell consist, so far as we have ascertained, of constituents precisely similar to those of which the simplest protozoa are composed. The protoplasm of the cell often contains granules and is frequently vacuolated. It generally exhibits the same general characters in the same carcinoma but its shape and size are affected by its surroundings and by the conditions under which its life is passed. Such is its anatomy; it is the anatomy of the simplest forms of animal life. Of its physiology we know less, for it has not yet been possible to study it outside the body of the host. Examined on a warm stage it is said to exhibit amœboid movement and to change its shape. The prickle cells which we frequently meet with in squamous-celled carcinoma remind us of the pseudopodial processes of certain of the protozoa. We may assume that it ingests, digests, and excretes, and that many of the appearances which the cells present on section are due to these phenomena. There can be no doubt that it may become surrounded by a membrane, that the membrane may become horny, and that the cell is liable to dropsical and degenerative changes.

Although we have not been able to follow all the phases of reproduction in the carcinoma cell there is evidence that this takes place by mitosis and by amitosis, and the conjugation of nuclei has been observed, not only in sections taken from carcinoma of the lower animals, but in carcinoma from the human subject. Whether this conjugation is concerned with the reproduction of the cells, or whether it is a means by which they renew their vitality, may be doubtful, but it appears to be of vast importance in the lives of the simplest animal forms. Whether the cells of carcinoma never die a natural death and thus fulfil the axiom that "unit masses of living matter are in some measure exempt from natural death"[5] I do not undertake to say, but one thing is sure, that they exhibit a singular tenacity of life, for they have been kept for many days at a temperature of less than 27° F. or have been placed in sterilised flasks of glass and sent across the sea by post, and have in each instance been inoculated with as good result as if they had just been transplanted from one animal to another. There seems, therefore, no reason to doubt that they may live during long periods of time provided the conditions are sufficiently favourable. Our director thinks they do not produce or "manufacture" any specific poison which is hurtful to the tissues of the host; but, on the other hand, they certainly seem to be liable to the attacks of pathogenic organisms in the same way in which the myxo-sporidia of the barbel and the pike are liable to them. Of course, I cannot claim that the life-history of the carcinoma cell is complete in the same sense in which it is complete for many of the protozoa. It would be strange if it were so, for hitherto it has been almost entirely studied as a dead organism and with preconceived opinions on its origin and nature.

Let us imagine a tumour wholly composed of such elements as these cells, having no other interest than their own maintenance and the reproduction of the species; tenacious of life, even under very adverse conditions; probably capable of living long periods of time where the conditions are moderately favourable, but not thriving and multiplying unless they are peculiarly favourable, even then usually not developing or multiplying very rapidly. Let us imagine that in the growth of the tumour and in the destruction which is occasioned by its growth masses of cells are detached and carried to distant parts of the body, where they sometimes meet with conditions which are favourable to their maintenance and multiplication, or that young cells, or spores of cells, gain access to the interior of the blood-vessels and lymph-vessels and are caught up and carried in the circulation until they are arrested in the vessels of distant organs and tissues where they may, or may not, meet with conditions which are favourable to their maintenance and multiplication. Let it be understood that they take no part in the maintenance or repair of the body in which they live; that they are not themselves transformed into the normal tissues of the part in which the tumour grows, nor do they transform the cells of the part into their own likeness; and that the only relation between the cells of the part and the cells of the tumour is that the cells of the part are, so to speak, commanded to form a stroma suitable to their support and maintenance. Let us take no heed for the moment of the likeness of the cells of the tumour to the normal cells and we have all the materials which are needed to explain almost all the phenomena of carcinoma with which we are acquainted. The commencement of the disease in the form of a tumour which is scarcely more than a tiny spot or an indolent lump, without pain and without discomfort, which has probably been growing for some time before it was discovered. The increase of the tumour, usually not very rapid, but sometimes more slowly, sometimes more rapidly, as the conditions of life are favourable to the cell and its vitality is less or greater. The destruction of the tissues of the part in which the tumour grows. The exposure of the tumour when the superficial structures are destroyed and the consequent processes of suppuration, ulceration, and sloughing, due to the access of pathogenic organisms to the tumour cells. The long lines of cells, similar to those of the tumour, which are often found beyond the limits of the tumour in the interstices between the muscular fibres.[6] The occasional blocking of the calibre of lymph-vessels and blood-vessels by a similar extension along them of the multiplying cells of the tumour, which have gained access to them at some point where the walls are weak or broken. The frequent occurrence of secondary masses in glands, and lungs, and liver, and in other organs and tissues; each mass composed of cells so like in shape and character to those of which the primary tumour is made up, that there is no doubt of their source, so like that the nature of the primary disease may often be determined without fail from an examination of the secondary growths. The occasional occurrence of tumours in the lungs, due to the detachment of small masses of cells which are carried in the air stream and deposited in the smallest bronchi, and which are composed of cells precisely similar to those of the primary disease. All these phenomena are at once clear to us.

We can understand not only why these secondary growths occur but, in a manner, why they fail to occur. The conditions are not favourable to the activity and multiplication of the cell. And, bearing in mind the tenacity of life with which the cell is endowed, we may assume that although the conditions are not for the moment favourable to the active life of the cell they are yet not so unfavourable as to destroy it, and that it may lie dormant in the parts to which it has gained access during long periods of time until the conditions become more favourable, when it resumes its activity and multiplies as if it still formed part of the original tumour. Thus we can understand why the occurrence of secondary tumours in the glands and other organs is sometimes so long deferred. We can appreciate something of the conditions on which depend very late occurrences of carcinoma in glands and other organs which take place years after the successful removal of the primary disease and which have always been a puzzle to us. During those long years the cells have probably lain dormant, not dead, but sleeping, until what we are pleased to call "some chance" awakens them from their torpor, puts new life into them, and enables them to prosper and multiply exceedingly. More

[4] Transactions of the Pathological Society, vol. xxxviii.
[5] Thomson's Outlines of Zoology, 1899.

[6] Mr. Lenthal Cheatle has kindly drawn my attention to the spread of carcinoma of the tongue in the interstices between the muscle fibres far beyond the apparent limit of the tumour and I have found his observation amply confirmed in some of my own specimens.

FIG. 1.

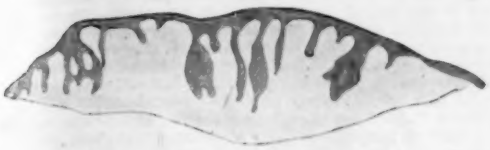

FIG. 2.

FIG. 3.

FIG 4.

FIG. 6.

FIG. 7.

FIG. 5.

FIG. 9.

FIG. 8.

FIG. 10.

FIG. 12.

FIG. 11.

FIG. 1.—Transition of normal into abnormal processes of the epidermis. Butlin, Sarcoma and Carcinoma, 1882, Plate 3.

FIGS. 2 and 3.—Carcinoma of the skin and adjacent epidermis. Ribbert, *Geschwulstlehre*, 1904, Fig. 469; and Borrmann, *Zeitschrift für Krebsforschung*, 1904, Band ii., p. 26, Fig. 45.

FIG. 4.—Bashford: Very early epithelioma of the tongue, with adjacent mucous membrane; Scientific Reports on the Investigations of the Imperial Cancer Research Fund, No. 2, 1905, Fig. 35.

FIG. 5.—Young carcinoma cell, with nucleus and membrane.

FIG. 6.—Large carcinoma cell with double membrane and multiple nuclei.

FIG. 7.—Carcinoma cell without a membrane. All from Fabre-Domergue, *Les Cancers Epithéliaux*, 1898, Plate 2.

FIG. 8.—Section of squamous carcinoma showing prickle cells. Also from Plate 2 of Fabre-Domergue.

FIG. 9.—Nucleus of calcituba.

FIG. 10.—Cells of plasmodium malariæ.

FIG. 11.—Colpoda Steinii cells. All from Calkins, "The Protozoa, 1901, Figs. 14, 8, and 17.

FIG. 12.—Direct division of cell of carcinoma of the breast.

FIG. 13.

FIG. 14.

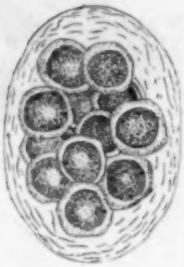

FIG. 15.

FIG. 17.

FIG. 16.

FIG. 18.

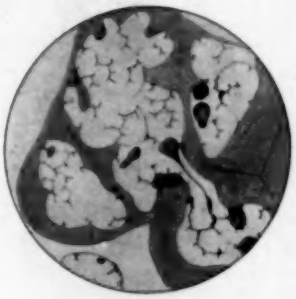

FIG. 19.

FIG. 20.

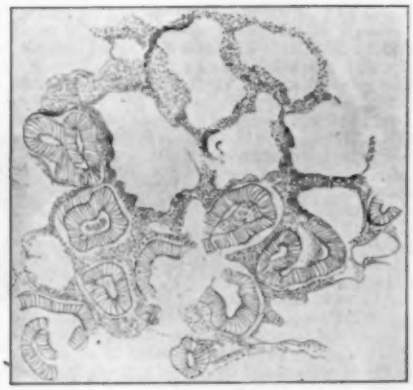

FIG. 21.

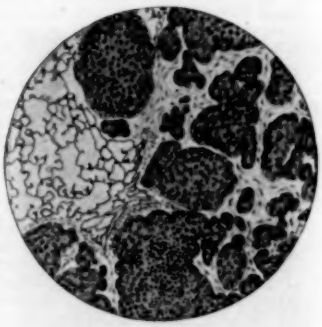

FIG. 13.—Endogenous multiplication of a cell from carcinoma of the breast. Figs. 6 and 25 (text) of Fabre-Domergue.

FIG. 14.—Actinospherium Eich.

FIG. 15.—Branching nucleus of Ephelota.

FIG. 16.—Division (budding) of Euglypha alveolata. All from Calkins, Figs. 17, 23, 54, and 25.

FIG. 17.—Conjugation of nuclei of Actinophrys.

FIG. 18.—Conjugation of nuclei from epithelioma of mouse. Bashford, Scientific Reports, No. 1, 1904, Fig. 32.

FIG. 19.—Metastatic squamous carcinoma of lung. Transactions of the Pathological Society, vol. xxii., Plate 3.

FIG. 20.—Metastatic columnar carcinoma of lung. Transactions of the Pathological Society, vol. xxv., Plate 6.

FIG. 21.—Metastasis of mouse carcinoma in lung to show the demarcation between the carcinoma and the normal tissues. Bashford, Scientific Reports, No. 2, Plate 11.

than once I have seen carcinoma thus lighted up in glands long after it ought naturally to have occurred and just when we were beginning to hope that all danger was at an end; once by exposure of the side of the neck to a cold draught during several hours, and more than once by an attack of inflammation of a salivary gland within or in the immediate neighbourhood of which the lymphatic glands were placed. We can understand why our operations fail and why they succeed. The surrounding tissues are already widely infiltrated by the parasite in the one case and we have not cut beyond it, or it has already gained access to some gland or distant organ. In the other case it is less vigorous and active and having gained but a poor foothold on the tissues of the host has been easily and effectively removed. The action of destructive agents is just as intelligible: it is a question of complete destruction. As certain tissues and organs of the host receive the wandering cells coldly as if they would only harbour them and give them shelter, so we may assume that there are tissues and organs of the host which are not suited to the support of the cell and which never can be rendered suitable and that there are other tissues and organs which are only suitable at certain times and under certain conditions. And, as these may become more suitable at one time and the cells may not merely find refuge in them but may even grow and multiply; so, at another time, circumstances may render them less suited to the life of the carcinoma cell, and we can thus comprehend those rare instances in which the carcinoma undergoes spontaneous cure, either without or after operation. And in the same way we can understand the rise and fall in the tide of carcinoma, how the tumours are at one time smaller, and again larger and more active; how the patient may, indeed, seem to have been cured, but the cure has been delusive, due to lowered vitality of the parasite or to raised resistance of the tissues of the host. And to this greater resistance we must attribute the happy result of those treatments, such as removal of the ovaries or the administration of such remedies as thyroid extract, which have occasionally achieved a success which has raised the wildest hopes in the minds of patients and their medical men.

With regard to the general condition of the host at the time of the first appearance of carcinoma, it is a matter of common knowledge that many parasites, particularly vegetable, obtain access to the body of the host when its strength is impaired, and it is equally a matter of common knowledge to our profession that many of the patients who suffer from carcinoma "are, for their age, in a full average of general good health."[7] But it must not be forgotten that although the health of the whole body may be, or seem to be, unimpaired the health of the part attacked is more frequently impaired than not. Of the greater liability of one sex than the other to carcinoma, it may be safely held that this is largely a question of the greater or less liability of particular organs and tissues and of their condition at the time of the attack. And again, of inheritance it may be said that it is the inheritance, not of the disease, but of organs and tissues which are peculiarly vulnerable to the disease and that the nature of the inheritance is the same as that of many persons to the attack of the tubercle bacillus.

Of the influence of dwelling and soil and climate it is too soon to speak. They stand for the present discredited and the age incidence is in the ascendant. But I am not yet disposed to rate them as of no consequence in the etiology of carcinoma. I might continue this part of the subject to occupy the remainder of the lecture, but there are certain problems which command attention. If the carcinoma cell is an independent organism, living as a parasite, it ought to satisfy some, at least, of the following requirements: It should present the same or similar characters in every part of the host in which it occurs; it should be transmissible from one part to another of the same host; it should be transmissible from one host to another host under certain conditions; and it should be capable of living outside the body of the host, as some similar parasites are able not only to live but to thrive and multiply outside the body of their host. The first and second of these conditions are fulfilled so regularly and so frequently that every student knows that carcinoma is conveyed through the medium of the blood and lymph, and that the characters of the primary disease are repeated in the secondary growths with such fidelity that the variety and seat of the primary growth can often be accurately determined by a study of the secondary growths. The question of the transmissibility of the parasite from one host to another host is naturally inseparably involved in the question of the infective nature of carcinoma. In dealing with this part of the question I must ask leave to substitute the term "communicable" for the terms "infective" and "contagious." Mere contact with animals suffering from the disease may be quite insufficient to communicate carcinoma; and the mere breathing of the same air may be equally inefficient to communicate carcinoma. But that carcinoma is a communicable disease there can remain no possible doubt. Whether Morau, as Fabre-Domergue asserts,[8] was the first person successfully to inoculate mice with cancer some 15 years ago, or whether priority rests elsewhere, there is not the least doubt now that carcinoma of mice is successfully inoculated in mice by many pathologists in many countries. The experiment has been repeated with such a large percentage of success that no one any longer doubts it. If, therefore, the carcinoma of the mouse is identical in nature with carcinoma in the vertebrate animals generally, carcinoma is a communicable disease; and all failures to communicate it by inoculation in other animals than the mouse only prove that it is difficult to inoculate. The difficulty in the case of mice has been overcome, and it has been overcome in spite of the fact that large numbers of healthy mice kept in cages with carcinomatous mice have not contracted the disease. This circumstance has been employed to prove that the disease is not "infective" or "communicable." It only proves that it is exceedingly difficult for healthy animals to contract it from animals suffering from carcinoma. And it is a matter of congratulation to our unhappy race that a communicable disease, such as carcinoma, is communicated spontaneously so very rarely that we may regard it as "not catching" from a popular point of view.

Hitherto I believe that all experiments which have been made with the object of cultivating the carcinoma cell outside the body of the host have resulted in failure and this has been regarded as strong evidence against the parasitic theory. Even if it be admitted it is not a serious obstacle to the acceptance of the theory, for there are other parasitic organisms which are believed to be unable to exist outside the body of the host. But I am sure the last word has not been spoken on this part of the subject. Ballance and Shattock,[9] who do not seem even to have been successful in keeping the cells alive outside the body of the host, still maintained their unshaken belief in the parasitic nature of the disease and themselves suggested that "a process of cultivation more nearly allied to the natural" might be indispensable. In their later experiments on the inoculation and cultivation of psorosperms from the livers of rabbits, they not only failed in every attempt to inoculate the parasite but only succeeded in keeping it alive in tubes by preparing the tubes with rabbit-blood serum. Even then the authors thought there was no evidence that the psorosperms multiplied. Yet these are organisms of the nature and independence of which no doubt exists. Of course, it may be that the carcinoma cell is an organism incapable of thriving and multiplying outside the body of the host. But I am not at all disposed to take this for granted. Dr. Bashford quite confirms the experience of Professor Jensen[10] on the vitality of the cells of carcinoma. Jensen made successful inoculations from tumours which had been preserved for 18 days in ice at a temperature of 0·3° C., while the incubator at body-heat seemed to agree with the cells so ill that less than 48 hours of it sufficed to render the results of inoculation negative. Then Professor Jensen forwarded by post, under sterile precautions, portions of tumour from Copenhagen and five days later Dr. Bashford inoculated it with such success that more than 25 per cent. of the inoculations were successful. After this it is clear it would be premature to express the opinion that the cells of carcinoma belong to the class of parasitic organisms which cannot be induced to thrive and multiply outside the body of the host. That they can live apart from the host is clear. Whether they can thrive there is yet to be discovered. Thus the carcinoma cell satisfies what is required of it so far that it presents the same or similar characters in every part of the body of the host in which it occurs. It is transmissible from one part to another of the same host. It is transmissible under certain conditions from one host to another host. It will live outside the body of

[7] Paget: Clinical Lectures and Essays, 1879, p. 13.

[8] Fabre-Domergue, Les Cancers Epithéliaux, 1898.

[9] Loc. cit., p. 434.

[10] Scientific Reports, Imperial Cancer Research, No. 1, p. 14.

the host for many days, and at the end of many days, if it be placed in favourable conditions, it will thrive and multiply as if it had never left the body of the host.

I must confess, seeing how well this theory explains almost all the phenomena of carcinoma and how much evidence is already present in proof of it, I am surprised that it has scarcely been maintained before. Hauser[11] is the only pathologist, so far as I am aware, who has propounded it in his attempt to show that the cells of carcinoma are a new race of cells. In truth, everybody who has worked at cancer has been far more engaged in attempting to discover the origin of the cell than to determine what it is. Our minds have been possessed by the conception of the cell of carcinoma as a normal epithelial cell which has escaped from the bondage of the laws which confine such cells and has, so to speak, run wild, obeying no laws and performing no duties. Pathologists have been wondering what has driven it to such evil courses. Some have explained it by assuming that every epithelial cell is capable of acting in like manner if certain restraints, local or general, are lowered or removed. Others suggest that the unnatural activity of the cell of carcinoma is due to irritation of the cell itself. Others that the ill-mannered and unmanageable cell is derived not from the normal epithelium but from cells which were intended to become epithelial but which have remained embryonic and in a dormant condition for as many as 50 years or more. And from Professor Farmer[12] and his colleagues we have received information of another kind which may help us to the discovery of the genesis of carcinoma in the future.

Although for the present I am much more concerned in determining the nature of carcinoma than its origin and the object of my lecture is to persuade biologists and pathologists to help us to solve the problem, which I do not think so very difficult, and although I might fairly claim that the consideration of its genesis is no part of my duty, it would be absurd that I should close my eyes to the difficulties of the problem of its origin if the carcinoma cell is admitted to be an independent organism, a parasite within the body of the host. I suppose we must then assume that the parasite is introduced into the body from without, after the manner of parasites generally or that it is formed, in some unknown manner, within the body of the host. In favour of the former view many reasons can be urged. Carcinoma first appears in a very large number of cases either on or just beneath the external or internal surface of the body. Or, if it appears at some distance beneath the surface, it frequently attacks parts to which there is free access from the surface—take the breast as an example. In many instances the part which is attacked is lowered in vitality; it is a sick part: it has been prepared for the entrance of the parasite by injury, or long-continued inflammation, or by degeneration. We are familiar with this preparation in parts which are frequently and readily examined, such as the lower lip and tongue. And we know, or think we know, that the first appearance of carcinoma in these parts is preceded by an actual wound or sore, through which the parasite may have gained an entrance. And in similar parts of the body which are not so readily examined, such as the larynx, the œsophagus, the intestinal canal, we have the right to assume that the occurrence of the disease is similarly preceded by injury, or long-continued inflammation or degeneration. The youngest carcinomata which have been studied by microscopists appear to be separate and distinct from the tissues of the part in which they occur; and from this separate and distinct mass of cells the extension and dissemination of the disease are traced in so many instances that we cannot doubt that the conditions are the same for all. The natural or spontaneous occurrence of carcinoma accords in its characters and course with the course and characters of carcinoma which has been inoculated; and the metastases of carcinoma in the body of the host in which it has developed spontaneously are regarded by pathologists, quite justly, as, each and every one, successful inoculations of the disease wherever they occur. Cases of auto-inoculation and reputed cases of contagion of carcinoma which have been placed on record and which are admitted by many pathologists, but which are for the moment discredited by the pathologists of our own research, point to the same conclusion. The more frequent occurrence of carcinoma in particular houses and in particular districts suggests that the parasite may exist outside the body of the host in those houses and in those districts; and although many of the cases of cancer houses and cancer districts will not bear close investigation we are not yet in a position to regard them all as worthless. Indeed there is so much to be said in favour of the entrance of the parasite from without, and the theory is so inviting and would render the further study of the disease so much more simple, that I set down with reluctance the evidence against it, but this is so important and of such a character that it is impossible to pass it by.

First, the characters of the carcinoma cell, the parasite. These conform so closely to the characters of the epithelium of the part in which the carcinoma first appears, that, for some 30 years, Waldeyer's theory of the descent of the carcinoma cell from the normal epithelium has held almost undisputed sway over the minds of pathologists. The same type of cell prevails in all the metastases of the same carcinoma. The three great types—the squamous, the columnar, and the spheroidal—are so constantly reproduced in their metastases that there is seldom any difficulty in recognising them. The squamous type, so far as we know, never arises in, or in the vicinity of, columnar or spheroidal epithelium. The columnar type only arises in close contact with tubes lined with columnar epithelium; and the spheroidal type arises only close to acini which are lined with spheroidal epithelium. The constancy of this phenomenon is not questioned; the difficulty is to explain it. We may conceive that a single parasite gains entrance to the body from without, comes in close contact with the epithelial cells of the part in which it settles, and is so impressionable that it is moulded into the shape and develops the characters of the normal epithelium. Even if the parasite were crossed with the normal epithelium it would be difficult to understand why the resulting cells should be so strongly influenced by the mere breeding-in of the two kinds of cell—the parasite and the normal cell. And it is still more difficult to understand why the influence should be transmitted from generation to generation of the resulting cells, so that the cells of every metastasis present the general characters of the epithelial cell. Again, we may conceive the idea of several parasites, one, for instance, for each of the three great types of epithelial cell—a squamous parasite, a columnar parasite, and a spheroidal parasite. But it would even then be necessary to admit that each of the three parasites will only thrive and multiply when it is introduced into the body in, or in the near neighbourhood of, the epithelium which it resembles, or when by chance it finds its way there. The proposal is so improbable that we reject it as soon as uttered. Quite apart from the mere anatomical characters of the three types of cell, and quite apart from the differences in malignancy of carcinomata which depend on the anatomical features and relations of the parts in which the tumours grow, there are reasons for suspecting that the cells themselves vary in the powers they possess. It is notorious that squamous carcinomata chiefly affect the tissues in the immediate neighbourhood of the part in which they grow and the associated lymphatic glands and that they are rarely disseminated in other parts of the body. It is equally notorious that spheroidal carcinomata form their metastases in the glands, the lungs, the liver, the bones, and other organs and tissues. And it is perfectly well known that columnar carcinomata also form their metastases in the glands, the lungs, and the liver. These peculiarities can only be in part attributed to the relation of the parts in which the three varieties of carcinoma primarily occur to the parts in which their metastases are found. And we can only assume that the columnar and spheroidal cells are hardier than the squamous cells and that they find in many parts of the body of the host conditions which are favourable to their development, while the squamous cells are more dainty, or less hardy, and require more favourable conditions generally, and that these conditions are usually only found in certain parts. This is sometimes singularly illustrated in cases in which two varieties of carcinoma occur simultaneously in the same individual. Recently an old gentleman in whom I took great interest died after many months of suffering from carcinoma of the larynx and carcinoma of the rectum. The symptoms of the carcinoma of the larynx were present long before the symptoms of the carcinoma of the rectum but I will not on that account undertake to say that the carcinoma of the larynx preceded in point of time the carcinoma of the rectum. The

[11] Ziegler's Beiträge zur Pathologischen Anatomie, 33, s. 1, 1903, Giebt es eine primäre zur Geschwulstbildung führende Epithelerkrankung?

[12] Proceedings of the Royal Society, vol. lxxii.

post-mortem examination discovered that a large part of the larynx had been destroyed by the disease and the variety of carcinoma was squamous. There was in the rectum an ulcerated columnar carcinoma which had occluded the lumen of the bowel. There were some cancerous glands in the neck and these contained squamous carcinoma; and there were a few small metastases of carcinoma in the lung. Now the carcinoma of the larynx, having been ulcerated for several months and lying right over the entrance to the air passages, might have been expected to be the father of the tumours in the lung. While the carcinoma of the rectum, being far distant from the lung and having no other access to it than the medium of the blood, which was common to both carcinomata, could scarcely have been suspected as the more likely parent. Yet it was so, for the characters of the tumours of the lung were those of columnar carcinoma. Where two varieties of carcinoma come in contact, the one is said to invade the other and the stronger remains in possession of the field;[13] but I do not know whether the spheroidal and columnar carcinomata in these circumstances always prevail over the squamous carcinomata.

Secondly, there is the difficulty of the structure of carcinoma, the arrangement and disposition of the parasitic cells, and the stroma or framework in which they are disposed and arranged. It has been already stated that the stroma, so far as the latest researches can decide, is derived from the connective tissue of the part in which the tumour grows. It may be said to hold a subordinate position in the anatomy of the disease. If the formation of the stroma is attributed to the irritation produced by the presence of the carcinoma cells we should expect that it would be very similar for each of the three types of carcinoma tumour. But this is not the case. The stroma of each of the three types is peculiar to that type within certain limits and is not common to all three. This is particularly well shown in columnar carcinoma, in which the cells are disposed and arranged in follicles similar to normal follicles lined with columnar epithelium but rarely so orderly and regular. If the formation of the stroma is attributed to a kind of influence or command exerted on the connective tissue elements by the carcinoma cells, like that which the epithelial cells appear to exercise over the connective tissue elements in the development of the body, it is still more difficult to conceive that parasitic cells entering the body from without should acquire such a specific influence over the connective tissue elements of the part in which they settle.

Third, there is what is termed the "age incidence" of carcinoma. And I speak particularly of carcinoma here because I still hold to the opinion that the age incidence of sarcoma and carcinoma is essentially different. But for carcinoma there is no doubt it occurs spontaneously in individuals, for the most part, beyond the period of middle life. And the longer men and women live the more likely are they, in comparison with the total number of persons living at that age, to suffer from carcinoma. In other words, the liability to the first attack of carcinoma increases as age advances. The Imperial Cancer Research has taught us that this law is probably as true for animals as it is for man. And our director suggests that it is equally true for organs. But, however that may be, we have to face the problem of the occurrence of carcinoma in relation to age. Why are middle-aged and old people so much more liable to carcinoma than young people, so much more so that young people are generally regarded as almost exempt from carcinoma? For many years past the question has been answered on the assumption of the descent of the carcinoma cell from the normal epithelium. And the answer has been that this descent cannot take place unless the tissues are degenerated and that this degeneration is the result of advancing age. We might still accept the necessity of degeneration of the tissues and assume that a parasite of the nature of the carcinoma cell cannot enter the body and obtain a foothold in it unless the tissues are degenerated. There is nothing unreasonable in the supposition. But inoculation experiments on mice have shown that, although mouse carcinoma occurs spontaneously only, so far as is known, in aged mice, yet inoculation of the disease is as successful in young mice as it is in old mice. So that it would seem that the tissues of the young and healthy are quite suited to the maintenance and prosperity of the parasitic cells, but that they are not able to produce them.

It must be admitted that these three features of carcinoma, the characters of the cell, the structure of the tumour, and the age incidence, make it difficult to conceive the idea of a parasite introduced into the body from without. And they do strongly suggest that the parasite is actually formed or developed within the body of the host, and that it is in some manner derived from the elements of the host.[14] Hauser has no doubt that his new race of cells is derived from the elements of the host and appears to find no difficulty in the hypothesis. I confess it is to me an astounding proposition; for, set forth in plain terms, it is none other than the origin of new species of the lowest forms of animal—of protozoa. The mode of origin which is suggested is so different from that we have been accustomed to accept for the last five and twenty years that I scarcely dare to set it down in words. That there will be much discussion and dispute over it I cannot doubt; for I am quite confident that time and research will confirm the view I have expressed to-day of the nature of the carcinoma cell. And as I am anxious that it should be confirmed as speedily as possible I will indicate the weak links in the chain of evidence and the means by which they may be strengthened.

We want to complete, if possible, the life-history of the carcinoma cell outside the body of the host, and with this end in view repeated attempts should be made to induce the parasite to thrive and multiply under artificial conditions which will permit the study of every phase of its existence. We have learned that it can live; we have now to learn whether it can thrive outside the body of the host. We need incessantly repeated attempts, under all conceivable conditions, to inoculate the carcinoma cells in other animals than the mouse. The Imperial Cancer Research is occupied with these experiments at the present time—thus far without success. I would suggest that the cultivation and inoculation experiments are far more likely to be successful if they are preceded by series of experiments of the kind practised years ago by Ballance and Shattock[15] on the psoro-perms of rabbits. The failure of their attempts to cultivate the parasite and to inoculate the rabbit with psorosperms taken from rabbits clearly shows that the cultivation and inoculation of parasitic protozoa is not by any means so simple a matter as it might be deemed to be and that the laws and methods of these cultivations and inoculations must be studied and practised again and again under various conditions before the lesson can be learned and successfully applied. In the prosecution of this study lies the clue to the inoculation of other animals besides the mouse.

Finally, we want the most careful and detailed study of cases of reputed contact cancers occurring in the same individual and from one individual to another. This is the only research for which I am competent and in which I may hope to take a part. Our director has pointed out to me that, in many of the cases in which one individual is reputed to have caught cancer from another, the disease is not the same in the two individuals. Not only is it not the same variety of carcinoma, it has even been sarcoma in the one and carcinoma in the other. Of course, such cases cannot at the present moment be accepted as cases of contagion. But all the reputed cases of contagion should not be condemned because many of them appear to be worthless. Each individual case must be investigated on its own merits and I have a very strong impression that some cases of true contagion, if only a very few, will be discovered. I would not yet cast aside the cases which appear to have no value because the disease is not of the same variety in the giver and the receiver. They should be carefully recorded by competent observers in the hope that even they may throw some light on the problems which we have to solve. I am sure there is no circumstance so small that it should be lightly passed over in this investigation; and, on the other hand, that there is no obstacle so large that it should not be boldly faced and treated without prejudice.

[13] Scientific Reports, Imperial Cancer Research, No. 1, p. 34, note.

[14] Loc. cit.

[15] Transactions of the Pathological Society, vol. xlii., p. 377, 1891.

ROYAL WATERLOO HOSPITAL FOR CHILDREN AND WOMEN, WATERLOO BRIDGE-ROAD, S.E.—The Duchess of Albany (President of the Ladies' Association) paid a surprise visit, on Nov. 30th, to this hospital. After minutely inspecting the new building and looking through the various wards and offices, Her Royal Highness expressed her satisfaction at all she had seen and her hope that funds would soon be available to admit of the whole number of beds and cots being filled.

A Lecture
ON
HABIT SPASM IN CHILDREN.

Delivered at the Hospital for Sick Children, Great Ormond-street, London, W.C.

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GENTLEMEN,—Amongst the many functional nervous disorders to which children are subject one of the commonest is habit spasm. This name has been given to certain oft-repeated and seemingly purposeless movements which most commonly affect the face or head and which, although they may change in character from time to time, are for varying periods persistent in kind, whether the movement be a simple twitch of one muscle or a more complicated action of several muscles. The term "tic" is sometimes applied to this disorder but lacks the descriptive merit of "habit spasm" which I shall therefore use. Trivial as the movements may be their frequent repetition is most worrying and distressing to parents and so the child is brought sooner or later to the medical man, and I will venture to say that there are few disorders of childhood out of which the medical attendant is likely to gain less credit than these cases; they look so easy and they are so difficult to cure. But if there is no drug which acts as a specific for habit spasm there are many details in the management of these children upon which we may give valuable advice and the value of our directions is likely to be in direct proportion to our appreciation of the relations and significance of habit spasm.

The most frequent form of habit spasm is a rapid blinking of the eyes or a more forcible closure of the eyelids described by the parents as "screwing up the eyes;" this movement, in the slighter or more forcible degree, was present in 47 out of 100 consecutive cases under my care; sometimes it was the only spasm present throughout the affection but more often it was the first to appear and was subsequently replaced or accompanied by some other form of spasm. Much less common is a movement of the eye itself: in 5 per cent. of the cases the child had a habit of suddenly turning the eyes upwards and still more rarely there was a sudden lateral deviation or a rolling movement of the eyes.

Next in frequency to the sudden blinking or closure of the eyes which I have mentioned are various movements of the face, perhaps most often a twitch of the nose, which may be twisted to one side, or a sudden drawing up of one angle of the mouth, or the twitching may affect the forehead, causing a sudden frown or an elevation of the eyebrows. Grouping together these various facial contortions, I noted one or other of them in 48 per cent. of the cases. A common spasm is a sudden antero-posterior jerk of the head, a rapid affirmative nod; sometimes it is a sudden lateral rotation as in negation; or the head is rotated always towards one shoulder only or it may be momentarily thrown upwards. Some such head-jerk was present in 30 per cent. of my series. The limbs are less often affected but the upper limb more frequently than the lower. The upper limb was affected in 22 per cent., the lower in 9 per cent. In the upper extremity the commonest movement is a sudden elevation of one or both shoulders; this was present in several of my series, but all sorts of curious movements are seen. For instance, a girl, aged 11 years and four months, developed a habit of frequently flipping the end of the mid-finger against the end of the thumb first in one hand and then in the other as if snapping her fingers; this continued at frequent intervals all day for three weeks, then it ceased and was replaced by a habit of suddenly jerking her head upwards. Another child, a girl, began at the age of eight years and ten months to strike herself frequently on the chest with her hand at home and at school, but soon this stopped and she began to blink frequently and later developed a sudden antero-posterior jerk of her head; another girl who, at the age of six and a half years, had begun to blink and then had developed an antero-posterior jerk of the head, began at eight years to abduct her arms suddenly and beat them against her thighs like a bird flapping its wings. Another girl, nearly 12 years old, made frequent sudden clawing movements with her hands.

In the lower limbs equally curious movements occur. A boy of eight years would at frequent intervals "paw the ground like a horse" whilst out walking; the affection had begun with blinking of the eyes two months earlier; then this ceased and he acquired a habit of frequent grunting and at another time a sudden head-jerk. A girl about ten years old who 18 months earlier had begun to interpolate a curious sound between every few words in speaking, and a little later had changed this habit for a frequent clearing of the throat, was now said to jerk one leg forward quite suddenly at short intervals when walking. A girl, aged six and a half years, who was brought first for blinking, and when this ceased for continual "hawking," had now begun to pause suddenly in walking and turn one foot over on its outer side and then the other foot similarly. Another girl, aged eight and a quarter years, had a curious habit of raising herself suddenly on her toes whenever she began to speak.

Trunk movements are more uncommon; a child to whom I have already referred as flipping her fingers was brought a year later for a sudden bending of her trunk to one side, a sort of pleurosthotonos but quite momentary; it occurred usually whilst out walking. A boy, aged seven years, showed a sudden twitch of facial muscles, drawing his mouth over to the right side and at the same time his whole trunk was jerked slightly forward.

A common form of habit spasm is the frequent repetition of some particular sound which may be like that made in "clearing the throat" or a more obvious "hem," or may be of more articulate character resembling some syllable or word which the child utters in season and out of season in the most inopportune manner; rarely the sound is much more like one of the involuntary sounds produced by healthy persons, such as hiccough or a gurgling sound in the throat. One or other of these varieties was present in 14 out of my 100 cases. As examples of these I may mention a girl, aged nine and a half years, who first showed a rapid affirmative jerk of the head which recurred sometimes twice in a minute; she made also at short intervals a slight grunting sound and for a time had occasional momentary adductor spasm of the arms; these habits disappeared almost entirely after a month's stay in the country but about two years later she was brought again for a return of the antero-posterior jerks of the head and a very frequent inspiratory sniff. A boy, aged 11 years and four months, who began with a frequently repeated "ahem" and then passed from one habit spasm to another has now begun to roll his eyes up frequently and twitch his face and at the same time makes a sudden hissing noise between his teeth at short intervals. A girl, aged eight years, who attended first for blinking and, when this stopped, for a sudden shrug of the shoulders, uttered a sound like "pistol" at irregular intervals in the most irrelevant manner.

Such are the irregularities which are grouped together as "habit spasm," but as you will have noticed the term "spasm" hardly seems equally applicable to all; the jerk of the head, almost like the result of an electric shock in its suddenness, seems much more appropriately termed spasm than does such a movement as flapping the arms against the thighs or the even more quasi-purposive movements which sometimes alternate with a simple spasm. Twice I have seen a simple twitch of face or nose replaced by a frequent sudden licking of upper or lower lip, so that the lip became reddened and sore, and one child who attended for years with first one habit spasm and then another had at one time a troublesome habit of licking with her tongue objects which happened to be near her but this, like the rest of her curious habits, passed away soon only to be replaced by some other.

To this account of the individual movements I would add that whilst in most cases the movement occurs singly, whether the child shows only one or more of the different forms—I mean, for instance, that a sudden jerk of the head and perhaps a grunting noise recur at irregular intervals of a few seconds or minutes—yet in some cases I have seen the particular spasm to occur in a series of perhaps six or eight repetitions in rapid succession, after which the child would show no spasm for several

minutes when another series would occur. There is in these cases, as it were, a grouped habit spasm, a sort of habit clonus. Another feature of the disorder, which I have illustrated incidentally in this description of the movements, is the limitation of the spasm to different parts at different times, sometimes to one part only; in one child there is only blinking, in another blinking and a twitch of the nose, in a third, perhaps, an added shrug of the shoulders; the particular spasm is defined and settled; there is none of that complete uncertainty as to the whereabouts of the next jerk which is so characteristic of chorea, where the movements vary continually from moment to moment. Yet a further peculiarity, which I have also mentioned incidentally, is the striking tendency to change after a varying period of days, weeks, or months, from one form of habit spasm to another; as one mother said to me of her child, who attended here with habit spasm for eight years, "as fast as she gets rid of one movement she seems to get another."

A remarkable feature of habit spasm, and one upon which I would lay some stress, for it may be of some weight in diagnosis, is its diminution or cessation in many cases so long as the child is conscious of being specially under observation; sometimes, indeed, the medical attendant has to rely entirely upon history in his diagnosis; for the movements may cease directly the child is conscious that he is being watched by the medical man, but directly this inhibitory effect of observation is removed—as it may be by letting the child sit quietly aside whilst the mother is being questioned—the habit spasm becomes evident.

So far I have spoken chiefly of the movements which are the characteristic feature of habit spasm, movements which vary from a simple twitch of one muscle up to a complex coördinated movement such as pausing in walking to turn each foot over on its side; I have mentioned, also, the occurrence of apparently involuntary utterance of sounds which similarly vary from a simple grunt up to a complex articulate utterance, as in the case where "pistol" was the repeated sound. But there is yet another manifestation of the disorder, which has been described by some writers under a separate heading as "psychical tic"; the child in some cases, and these generally with very marked, sometimes almost violent, affection of movement, shows curious psychical disorder; a girl, aged eight years, whose earliest symptom had been simple blinking of the eyes which was replaced a little later by shrugging of the shoulders, subsequently was brought to me with a complaint that she had begun to utter foul language, apparently without any reason or even seeming to be aware what she was saying. Another child, a boy, aged 10½ years, who had begun with a simple noise like clearing the throat at short intervals and then had developed the habit of frequent frowning and an upward jerk of the head, was brought to me two years later with delusions of "microbes on his hands," so that it was difficult to get him to take his food. Such cases undoubtedly represent the more severe and intractable degrees of the disorder but I have specially mentioned the early symptoms in these two instances to show that they differ in no way from many another case of habit spasm in which there is less evidence of psychical disturbance and I say "less evidence" advisedly, for although but few cases show such pronounced disturbance as I have described there are many more in which extreme excitability, great passionateness, or a morbid waywardness shows evidence of psychical disturbance. To this point I shall refer again; here I would only deprecate the specialising of any such group of cases as if "psychical tic" were some affection quite distinct from the mild case of habit spasm which shows only blinking of the eyes. Similarly every gradation may be observed in one and the same child from a simple twitch of the eyelids or nose up to the violent and sudden jerk which has been described—with no sufficient ground, as it seems to me—under a separate heading, as if quite distinct from the slighter degree of spasm, as "tic convulsif."

Etiology.—Turning now to the etiology of habit spasm one might have expected that, being a functional neurosis, it would be much commoner in girls than in boys. My own figures, however, showed 53 girls to 47 boys; the excess of girls affected, therefore, is only slight. I would remind you that the same holds good of hysteria in childhood, where the proportion according to my own figures is 1·5 to 1, a proportion which contrasts with the 10 to 1 which is stated to be the relative frequency in adult life. The sexes are less sharply differentiated so far as concerns the tendency to functional nervous disorders in early life than in later life. With these proportions I would specially contrast the sex incidence of chorea where the proportion of females to males has been shown to be approximately 3 to 1. The age incidence of habit spasm is of some interest, as it has been

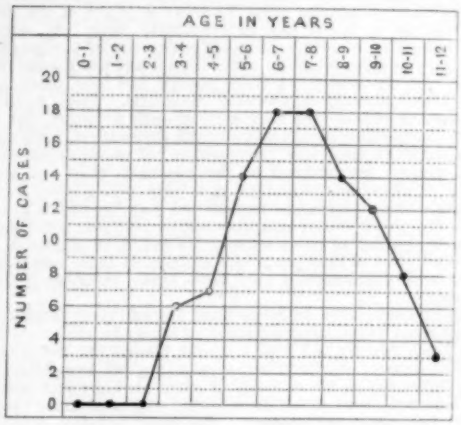


Chart to illustrate age incidence in habit spasm.

suggested that it bears some relation, which I shall mention later, to the cause of the disorder. It is shown in the accompanying chart in which the age at onset is recorded in 100 consecutive cases under my care.

The one fact which stands out pre-eminent in the history of children with habit spasm is nervous instability, and this is well seen in the various disorders with which habit spasm keeps company. A boy, aged 11¾ years, who was brought for a frequently-recurring shrug of both shoulders, was said to be a very timid child, often suffered with headaches, was very restless, and talked much in his sleep; the shrugging of the shoulders was noticed to be worse when he came home from school. Another boy, aged seven years, who was brought for twitching of the face and jerking of the body forward, and later for some blinking, was said to be "very nervous," talked much in his sleep, had had enuresis, and the habit spasm was more whenever he became excited. Another child, a girl, aged 6½ years, who attended for many months with various habit spasms, had recently walked in her sleep; at the onset of the habit spasm she had begun to suffer with enuresis and a little later was said to be "so dreadfully nervous she cries if you speak to her."

There is no need to multiply examples of this sort, but to sum up the associated manifestations in my series of cases they were as follows: in a large proportion of the cases the child was said to be extremely nervous and excitable; in some cases the child was extremely irritable or passionate and difficult to control. Disturbances of sleep were very common, the sleep was often noticed to be restless, and in 20 per cent. there were more definite disorders of sleep; the child talked or walked in its sleep, had night terrors, or suffered with troublesome insomnia. Headaches were common and enuresis was noted in 10 per cent. of my cases. That peculiar form of looseness of the bowels which occurs immediately after each meal, "nervous diarrhœa," as it has been called, was noted in two cases. Stuttering occurred in two cases and I have noted in three cases a vaso-motor instability showing itself in extraordinarily ready flushing or extreme liability to urticaria. Convulsions had occurred in infancy or early childhood in 7 per cent. of the cases—an occurrence which, as Dr. J. A. Coutts has pointed out, often foreshadows nervous instability in later years. To this description of the accompaniments of habit spasm in children I would add one more which, though not a disorder, is like the "genius which is near allied to madness," a common association of nervous tendencies—I mean quick intelligence. Most of these children are sharp, responsive, "quick in the up-take." Often I have been told that they are "always reading" or "mad on school" (I quote the mother's words). The child with habit spasm is to be found at the top of the class and not

uncommonly in a class above his age. As a further point in connexion with their nervous temperament I would note that these children are almost never the "fat, sleek-headed, such as sleep o' nights," they are nearer akin to the lean Cassius—they are spare of build.

With all these indications of the nervous tendency I would class the perhaps more than average frequency of rheumatism in the family history of these children; in 14 out of the 100 the mother or father had had rheumatic fever; in three others a sister or brother; in seven others one of the grandparents; in seven others an uncle or aunt had had rheumatic fever; in six others the child himself had had pains in the joints, possibly or probably rheumatic. These figures perhaps understate the frequency of such a history, for I have counted only histories of definite rheumatism, omitting cases in which there was "rheumatism" of uncertain nature. The nervous temperament of the rheumatic child and the child of rheumatic parentage is a very real clinical fact whatever the pathological explanation may be, and it is in this respect, no doubt, that rheumatism may play some part in predisposing to habit spasm. As might be expected, a family history of neuroses is very common in these cases but I have only occasionally seen habit spasm in either of the parents.

Given the nervous tendency there are still other factors in many cases determining the onset, or it may be the return of the habit spasm; and first I should place local irritation, not because of its frequency—for in my own experience it has only been in the minority of cases that any such could be detected—but because its detection may be of much practical importance in treatment. The local irritation may be so slight that the child is barely, if at all, conscious of it and yet the removal of the irritant, if it be removable, certainly diminishes or stops the habit spasm in many cases. The age incidence suggests one possible source of irritation, the onset of habit spasm corresponds in so many cases with the onset of the second dentition, a process which in some children produces appreciable local worry and might be expected, like the teething of the infant, to produce reflex disturbance. I have seen several cases also in which caries of the teeth seemed to be an exciting cause of habit spasm and dental treatment has caused a rapid improvement. I am satisfied also that in some cases the blinking which is so commonly an early manifestation of habit spasm is started by a local cause, sometimes by a slight follicular conjunctivitis, so that when the lower lid especially is everted its inner surface is seen to be unduly red and granular, sometimes and perhaps more often by some error of refraction which, so my ophthalmic colleague, Mr. L. V. Cargill, tells me, is most commonly hypermetropic astigmatism. Similarly in the nose I have seen inflammation of the mucous membrane on the septum associated with a constantly recurring screwing up of the nose, and I doubt not that sometimes the "clearing of the throat" which becomes a habit and is replaced subsequently by other entirely different habits, may be started by some temporary naso-pharyngeal catarrh or by the more chronic catarrh which is so often associated with adenoids.

This leads me to raise another point which may emphasise the necessity for early detection of these local sources of irritation; I mention it as a suggestion rather than as an assertion—it has seemed to me that habit spasm once induced by a local irritation begets habit spasm elsewhere, so that a child who owing to some error of refraction has acquired the blinking habit may soon develop a twitching of the nose, and then, perhaps, lose both of these spasms and develop a shrug of one shoulder or a jerk of the head. It seems likely that more remote irritation may occasionally set up habit spasm. I have noted particularly the presence of worms in several of my series of cases, but one must remember that worms are exceedingly common in children without habit spasm and, moreover, even if worms do play any part in the production of habit spasm it may be rather indirectly by increasing the general nervous instability of the child than by any more immediate effect of the irritation.

Other factors which play no small part in the causation of habit spasm in children are mental strain and mental shock. There can be no doubt that the present system of compulsory education, enforced as it too often is by the bullying ignorance of attendance officers and attendance committees, involves a degree of mental strain which is harmful to many a nervous child. And let it be understood that in the influence of school there is to be considered not merely the strain of acquiring knowledge—this, indeed, may be but trivial, particularly for some of these children who suffer from habit spasm, for they are often particularly quick at learning—but also the strain of excitement in competition, the dread of failure and punishment—a very real strain with some of these nervous children—and in some cases also the continual dread of that most thoughtless of torturers, the schoolboy who finds his delight in teasing or terrifying a timid boy. Amongst the well-to-do all these difficulties can be avoided by home education where the nervous child has, perhaps, his hour or two hours of lessons and not only the hours but the subjects and the methods of education can be adapted, as they should be, to the requirements of the individual child: to attempt, as the modern tendency is, to adapt the child to its education may be an inevitable procedure in wholesale education but it is none the less unsatisfactory, and particularly unsatisfactory in dealing with such children as these with habit spasm. The effect of school on habit spasm is sometimes very striking, the spasm diminishes when the child is kept away from school and increases markedly or returns directly schooling is commenced again; there is sometimes other evidence of the nervous strain of school at the same time in the appearance or increase of sleep-walking, night terrors, or headaches when the child returns to school. It may be also that in this relation to school life, especially to the earliest years of schooling, lies the explanation of the very striking age incidence of this disorder, as shown in the chart above.

Excitement of any kind contributes to the production of habit spasm; I have repeatedly known the good effects of treatment undone by some exciting experience: the sensational doings of Blue-beard at the theatre made one child who was under my care much worse, and in another the newly conferred dignity of trousers increased the habit spasm considerably. More potent still is fright or mental shock of any sort: a boy, aged seven years, who had been improving, became much worse after being knocked down by a bicycle; another boy, aged eight years, whom I have already mentioned as "pawing the ground like a horse," became worse after pinching his finger in the door of a railway carriage. Similarly—and this is a point worth remembering—the mental shock of a surgical operation sometimes originates or increases habit spasm. In the case of a boy, aged nine years and four months, the habit spasm began directly after circumcision, and after various forms of habit spasm had appeared for many months he gradually improved; the teeth, however, were very carious, and five were extracted, with the result that his habit spasm again became bad; in another the habit spasm seemed to have been started by the operation for removal of tonsils and adenoids. Lastly, I would mention exhaustion as a factor which at any rate aggravates if it does not start habit spasm. I have purposely avoided particularising as to the kind of exhaustion, for I doubt if it be possible to separate physical exhaustion altogether from nervous exhaustion. In several cases I have been told that the habit spasm was always worse when the child was tired; in others it was definitely worse in the evening or when the child was allowed to stay up later than usual.

If I might throw out yet another suggestion for consideration it would be in the form of a question: May not habit spasm arise in the involuntary perpetuation of what began as a voluntary movement? I suspect that in some of the cases of local irritation to which I have referred the child began by screwing up its eyes or twitching the nose voluntarily and as a result of frequent repetition the movement changed from the voluntary into the involuntary; it has even seemed to me possible that such a natural movement as a toss of the head to one side which began in the effort to throw back the irritating curl which will fall over the face may sooner or later, in a nervous child, pass into the involuntary jerk of a habit spasm: in the same way I believe that I have seen wilful imitation of a parent's habit spasm pass into an involuntary facial twitch in the child.

Diagnosis.—The diagnosis of habit spasm is usually simple enough but it is sometimes mistaken for chorea. The points of distinction are these: habit spasm is a repetition of one movement or of one set of movements, chorea shows movements varying quite irregularly from minute to minute; habit spasm is generally diminished or temporarily abolished altogether by observation, whereas chorea is usually exaggerated by observation (in either case, however, the reverse sometimes occurs); habit spasm is usually much more limited in distribution than chorea; a twitch persistently limited to the face or head would be almost unknown in chorea, whereas it is a common form of habit spasm. But I am quite sure that there are cases in which

the diagnosis is extremely difficult; indeed, when I collected from my notes a series of cases of habit spasm for this lecture I found myself obliged to omit several cases which I had headed "? Chorea? Habit Spasm"; and the difficulty arises in two ways, the movements of habit spasm—e.g., in the shoulders and arms—may approximate in character and extent to those of a limited and slight chorea; and whilst habit spasm may be in such cases more extensive in distribution than usual, chorea, as we all know, is sometimes so slight that it is only detected by a shrug of one shoulder or a twitch of one hand.

And there is a further difficulty, as Dr. F. Warner pointed out, the nervous child often shows fidgety movements, very like chorea, especially under observation, and this "micro-kinesis," as it has been called, is not uncommon in children with habit spasm. Imagine, now, a child with this fidgetiness of his limbs brought with a complaint that he twitches his shoulders; there is perhaps a shrug of the shoulder not unlike the movement of chorea and an immediate diagnosis may be very difficult. In such cases repeated, and perhaps prolonged, observation may be necessary before a diagnosis can be made. Even the presence of rheumatism is not conclusive evidence in favour of chorea. I have already pointed out that a family history of acute rheumatism is particularly common in cases of habit spasm; more importance is, I think, to be attached to acute rheumatism in the patient, though even this is not conclusive, for some of my cases had apparently had definite articular rheumatism, though none had heart disease.

Treatment.—I have discussed etiology at some length because therein lies the key to the management of these cases of habit spasm but I must refer to some of these points again. First, I would emphasise the importance of the diagnosis between chorea and habit spasm in regard to treatment. By far the most important part of treatment in chorea is rest in bed; the child with habit spasm, on the contrary, does not require to be kept in bed at all: a good scamper at the seaside, or the varied interests of farm-life or country will do more to get rid of the habit spasm than anything else. I doubt if there is any treatment so effectual as a change to seaside or country for these children, generally marked improvement at least is obtained in this way, but unfortunately it is not always permanent, and even if the habit spasm has ceased altogether it is apt to return when the child goes back to town or to school. Of the influence of school I have already spoken; it may certainly be taken as a general rule that school should be forbidden and for a time no lessons should be allowed at all. But as the habit spasm diminishes an hour or two daily of home-teaching by a governess or tutor may be begun tentatively. Not only the duration of lessons but also the choice of subjects may have to be restricted; one subject or another may be particularly difficult to a particular child; to one "sums" are a bewildering misery, to another "spelling" is no better; and in all such cases those subjects should be left in abeyance for a time; the worry of them is undoubtedly prejudicial to these nervous children and will perpetuate such a condition as habit spasm. Obviously education is no small difficulty in a disorder like this which may continue with intermissions for several years, and whilst the well to-do can get over the difficulty to some extent by such restriction of lessons as I have described the poor have no such opportunity; half time attendance is resented or absolutely refused by school authorities and the only alternative is to keep the child away from school altogether for a much longer period than would be necessary if more ideal methods of education were practicable.

Having said so much about the necessity of avoiding school I should like to qualify this by saying that in exceptional cases school, so far from being injurious, seems to have a quieting influence upon the habit spasm. One may suppose this to occur when the home influences are such as to encourage neurotic tendencies; in any case, it is worth bearing in mind as a justification for trying the effect of school for a time.

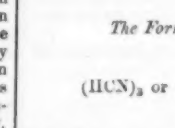
Another practical question asked by parents is this: Should the child be scolded or punished for its "tricks"? I have made some notes on the effect of scolding in some of my cases; in none was it said to have done any good, in some it was said definitely to have made the child worse. The necessity for avoidance of all forms of excitement and fatigue follows from what I have said of etiology, but I would remind you in particular of the bad influence of late hours on such cases. The need also for removing sources of local irritation has already been suggested. The eyes and the teeth are the parts most often requiring attention; worms also should be treated. As I have mentioned the possibility of a naso-pharyngeal catarrh occasionally starting the "hem" which constitutes one form of habit spasm, let me say a word against the indiscriminate removal of adenoids in such cases. The nervous disturbance caused by the fright of the operation or the anæsthetic has made some cases of habit spasm so much worse that I am satisfied that only in cases of necessity and after other means have been exhausted should operation be done. The drug treatment of habit spasm does not offer any large field for selection. I have found most useful a mixture of arsenic with bromide: liquor arsenicalis, three to four minims, with potassium bromide, five to ten grains, three times a day. This may be continued three or four weeks—the dose of arsenic to be reduced if any toxic symptoms arise—and then after an intermission of about a fortnight repeated again for three or four weeks. Another drug which has seemed to me of value in some cases is ergot; from a half to one drachm of the fluid extract can be given with four or five minims of tincture of nux vomica three times daily. I have also tried valerian with distinct advantage. In a bad case which some would have described as *tic convulsif* I have tried electricity, first faradism and then galvanism, with some temporary improvement, but not enough to justify strong recommendation. Lastly, for an intractable case simple change of environment, especially living amongst strangers for a time, will sometimes do more than any drug treatment.

A NEW SYNTHESIS OF TYROSINE FROM ANHYDROUS PRUSSIC ACID AND OXY-BENZALDEHYDE:

AN EXPLANATION OF ITS MODE OF FORMATION IN THE ANIMAL BODY.

BY P. W. LATHAM, M.D. CANTAB.,
FELLOW AND LATE SENIOR CENSOR OF THE ROYAL COLLEGE OF PHYSICIANS OF LONDON.

The Formation of Amino-malonic Nitrile.

$(HCN)_2$ or $CH(NH_2)(CN)_2$ or 

IF a fragment of potassium cyanide be added to anhydrous hydrocyanic acid, condensation of three molecules gradually takes place,[1] forming amino-malonic nitrile, a crystalline body—

$$3HCN = CH(NH_2)(CN)_2$$
Amino-malonic nitrile.

a black insoluble substance being produced at the same time. The nitrile may be extracted with ether; this, on evaporation, yields the crystals, which may then be dissolved in water, decolourised with animal charcoal, and recrystallised. The yield by this method, however, is small. A much larger result, not less than 50 per cent. of the theoretical amount, is obtained by the following process[2]: Add 2·6 grammes of pure dimethyl-aniline-oxide to 0·6 gramme of anhydrous prussic acid. Let the pale-yellow mixture remain in the dark for 24 hours at the ordinary temperature. Extract with boiling water and separate the nitrile from the aqueous extract by shaking it several times with ether. It must then be recrystallised from boiling water and decolourised with animal charcoal.

The Formation of Glycocoll and its Derivatives.

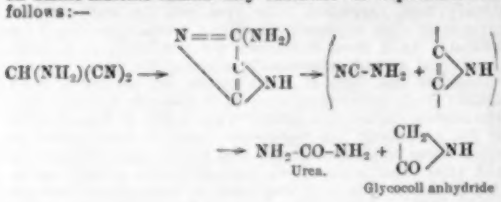
Warmed with barium hydrate, amino-malonic nitrile is resolved into glycocoll, ammonia, and carbonic acid—

$$CH(NH_2)(CN)_2 + 4H_2O = CH_2(NH_2)COOH + CO_2 + 2NH_3,$$
Amino-malonic nitrile. Glycocoll.

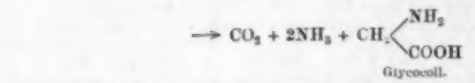
the carbonic acid and ammonia being liberated in the same proportions as result from the decomposition of urea when heated with barium hydrate. The action of barium hydrate

[1] Lescœur, Regault: Bulletin de la Société Chimique de Paris, t. 44, p. 473.
[2] Eug. Bamberger, Leo. Rudolf: Berichte, Band xxxv., s. 1083.

on amino-malonic nitrile may therefore be represented as follows:—

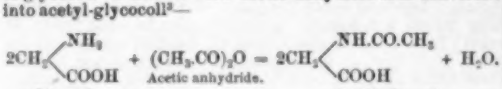


Urea. Glycocoll anhydride



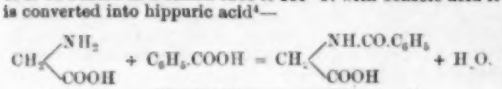
Glycocoll.

If glycocoll be heated with acetic anhydride it is converted into acetyl-glycocoll[3]—



Glycocoll. Acetic anhydride. Acetyl-glycocoll.

If it be heated in a sealed tube to 160° C. with benzoic acid it is converted into hippuric acid[4]—

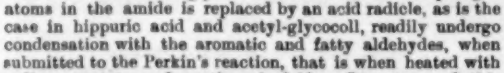


Glycocoll. Benzoic acid. Hippuric acid.

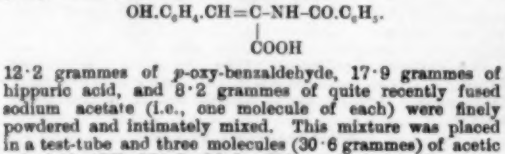
which is a normal constituent of the urine of herbivorous animals, and which also appears in human urine after the administration of benzoic acid.[5]

It has been recently discovered by E. Erlenmeyer, jun.,[6] that the derivatives of glycocoll in which one of the hydrogen atoms in the amide is replaced by an acid radicle, as is the case in hippuric acid and acetyl-glycocoll, readily undergo condensation with the aromatic and fatty aldehydes, when submitted to the Perkin's reaction, that is when heated with sodium acetate and acetic anhydride. By means of this reaction Erlenmeyer succeeded in condensing *p*-oxy-benzaldehyde and hippuric acid and forming *p*-oxy-α-benzoyl-amido-cinnamic acid.

The following is the method employed in the synthesis of *p*-oxy-α-benzoyl-amido-cinnamic acid:—



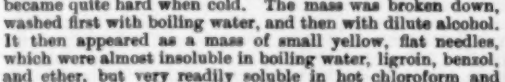
12·2 grammes of *p*-oxy-benzaldehyde, 17·9 grammes of hippuric acid, and 8·2 grammes of quite recently fused sodium acetate (i.e., one molecule of each) were finely powdered and intimately mixed. This mixture was placed in a test-tube and three molecules (30·6 grammes) of acetic anhydride $(CH_3.CO)_2O$ added. This was heated in the water-bath for from 20 to 30 minutes. The mixture first liquefied and then solidified into a yellow cake-like mass, which became quite hard when cold. The mass was broken down, washed first with boiling water, and then with dilute alcohol. It then appeared as a mass of small yellow, flat needles, which were almost insoluble in boiling water, ligroin, benzol, and ether, but very readily soluble in hot chloroform and fairly so in hot alcohol. The composition of the needles is $C_{19}H_{15}NO_5$. Not only had the aldehyde and the acid been condensed to form a lactimide, but the hydrogen in the hydroxyl of the aldehyde had been replaced by acetyl. The following is the reaction:—



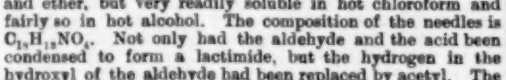
p-oxy-benzaldehyde. Hippuric acid. Acetic anhydride.

Lactimide. Acetic acid.

By suspending the lactimide in a dilute aqueous solution of 8·0 to 9·0 grammes of sodium hydrate and placing it in the water-bath, it is soon decomposed and saponified and a clear brownish-red solution is obtained. The addition of hydrochloric acid to the alkaline solution, *whilst still hot*, causes a voluminous precipitate, white at first and then becoming fawn-coloured, of small brilliant white prisms of *p*-oxy-benzoyl-amido-cinnamic acid, which can be purified by recrystallisation from dilute alcohol. The following is the reaction:—

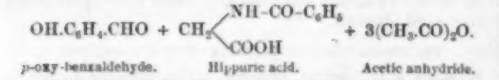


Lactimide. Sodium hydroxide.



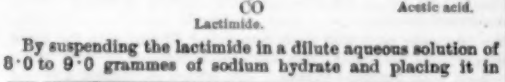
Sodium-oxy-benzoyl-amido-cinnamate.

from the solution of which, when acidulated with hydrochloric acid, the *p*-oxy acid



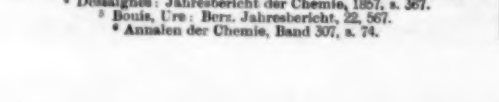
p-oxy-benzoyl-amido-cinnamic acid.

is precipitated and no longer contains the radicle acetyl. By the reduction of this acid, by means of sodium amalgam, Erlenmeyer[7] obtained



Benzoyl tyrosine.

but only in very small quantity, the product not exceeding from 10 to 15 per cent. of the unreduced acid. By heating the benzoyl tyrosine in a sealed tube with concentrated hydrochloric acid to 150° C. it was decomposed into tyrosine and benzoic acid.[8]



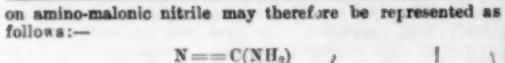
Benzoyl-tyrosine. Tyrosine. Benzoic acid.

The yield of tyrosine being only 25 per cent. of the theoretical amount, and consequently only about 2·5 to 4 per cent. of the above unreduced acid.

I therefore attempted by a different method to obtain

The Direct Transformation of p-*Oxy-benzoyl-amido-cinnamic Acid into Tyrosine.*

On boiling an aqueous solution of potassium cyanide it is decomposed into potassium formate and ammonia—



Potassium formate.

According to Peligot,[9] if potassium formate is moderately heated (*une température modérée*) with an excess of alkali, hydrogen is set free and potassium oxalate is formed,

if the temperature of the potassium oxalate and potassium hydroxide is still further raised the oxalate is converted into carbonate and a further liberation of hydrogen takes place.

It occurred to me, therefore, to attempt the reduction of the *p*-oxy-benzoyl-amido-cinnamic acid by means of potassium cyanide, and, furthermore, to use as an alkali barium hydrate instead of potassium hydroxide. I did this for two reasons: first, because when hippuric acid is heated with the former, it is resolved into glycocoll and benzoic acid and I anticipated that the same effect would be produced on the benzoyl tyrosine; and, secondly, because after the experiment the barium can be readily eliminated from the mixture by

[3] Curtius: Berichte, Band xvi., s. 757, and Band xvii., s. 1663.
[4] Dessaignes: Jahresbericht der Chemie, 1857, s. 367.
[5] Bouis, Ure: Berz. Jahresbericht, 22, 567.
[6] Annalen der Chemie, Band 307, s. 74.
[7] Loc. cit., p. 141.
[8] Loc. cit., p. 142.
[9] Annales de Chimie et de Physique, tome lxxiii., p. 220. See also Dumas and Stas, Liebig's Annalen, Band xxxv., s. 138.

means of a stream of carbonic acid. The following were the reactions which I anticipated:—

$$p\text{OH.C}_6\text{H}_4\text{.CH=C}\begin{cases}\text{NH.CO.C}_6\text{H}_5\\ \text{COOH}\end{cases} + 2\text{KCN} + 4\text{H}_2\text{O}$$

$$= p\text{OH.C}_6\text{H}_4\text{.CH=C}\begin{cases}\text{NH.CO.C}_6\text{H}_5\\ \text{COOH}\end{cases} + \text{H}_2 + (\text{COO})_2\text{K}_2 + 2\text{NH}_3$$

$$= p\text{OH.C}_6\text{H}_4\text{.CH}_2\text{.CH}\begin{cases}\text{NH.CO.C}_6\text{H}_5\\ \text{COOH}\end{cases} + (\text{COO})_2\text{K}_2 + 2\text{NH}_3$$

Benzoyl tyrosine. Potassium oxalate.

the benzoyl tyrosine, by the action of the barium hydrate, being then resolved into tyrosine and benzoic acid and their barium salts:—

$$p\text{.(OH)C}_6\text{H}_4\text{.CH}_2\text{.CH}\begin{cases}\text{NH.CO.C}_6\text{H}_5\\ \text{COOH}\end{cases} + \text{H}_2\text{O}$$

Benzoyl tyrosine.

$$= p\text{.(OH)C}_6\text{H}_4\text{.CH}_2\text{.CH}\begin{cases}\text{NH}_2\\ \text{COOH}\end{cases} + \text{C}_6\text{H}_5\text{.COOH}$$

Tyrosine. Benzoic acid.

By using an excess of potassium cyanide the benzoic acid is, by the nascent hydrogen, decomposed to some extent, into benzyl alcohol, &c. The result was successful, the method employed being as follows: 4·0 grammes of the *p*-oxy-benzoyl-amino-cinnamic acid were intimately mixed with 3·0 grammes of potassium cyanide (98 per cent.) which were then placed in a test-tube and eight cubic centimetres of water added, forming a clear solution. About 6·0 grammes of barium hydrate,[10] as free as possible from barium carbonate, were then dissolved in 40 cubic centimetres of water, and, whilst hot, added to the other solution. The whole was now boiled for a few minutes, and then carefully introduced into a warm combustion-tube of such a length that when sealed the mixture did not occupy more than three-fifths of its capacity. On cooling, the mixture solidified into a mass of long slender needles. The tube was then sealed and heated to a temperature of from 178° to 182° C. for eight hours. On opening the tube there was a free escape of ammonia. The contents of the tube were washed out, well diluted with hot water, filtered from the insoluble portion, and then subjected whilst hot to a current of carbonic acid gas so long as any baryta was precipitated. The filtrate was decolourised by boiling with animal charcoal and again filtered whilst hot. When cold, it became slightly turbid from the presence of the liberated benzoic acid, which was dissolved by the addition of a little ammonia. The clear solution was evaporated down in the water-bath until a slight pellicle formed at the edge of the liquid. On cooling, the tyrosine crystallised out in its characteristic form of fine silky needles matted together. These were purified first by recrystallisation from alcoholic ammonia (the crystals then presenting the usual form of needles radiating from a centre), and secondly, from solution in boiling water. The melting point was found to be 237° C. The substance responded perfectly to Millon's and Piria's tests. The yield varied in different experiments from 30 to 50 per cent. of the theoretical amount. This was possibly due to some variation in the temperature to which the different sealed tubes were exposed, and to varying amounts of the reducing agent, potassium cyanide, employed. The ammonium benzoate remained in solution in the mother liquor.

From these experiments, therefore, we may regard the synthesis of tyrosine from anhydrous prussic acid as taking place in the following stages:—

$$3\text{HCN} = \underset{\text{Amino-malonic nitrile.}}{\text{CH(NH}_2\text{)(CN)}_2}$$

$$\underset{\text{Amino malonic nitrile.}}{\text{CH(NH}_2\text{)(CN)}_2} + \underset{\text{p-oxy-benzaldehyde.}}{p\text{.OH.C}_6\text{H}_4\text{.CHO}} + 2\text{H}_2\text{O}$$

$$= \underset{\text{p-oxy-amido-cinnamic acid.}}{p\text{.OH.C}_6\text{H}_4\text{.CH = C(NH}_2\text{)COOH}} + \underset{\text{Urea.}}{\text{CO(NH}_2\text{)}_2},$$

which when acted upon by $2\text{HCN} + 4\text{H}_2\text{O}$

$$= \underset{\text{Tyrosine.}}{p\text{.OH.C}_6\text{H}_4\text{.CH}_2\text{.CH(NH}_2\text{)COOH}} + \underset{\text{Urea.}}{\text{CO(NH}_2\text{)}_2} + \underset{\text{Ammonium oxalate.}}{(\text{COO})_2(\text{NH}_4)_2},$$

or in one equation:—

$$5\text{HCN} + \underset{\text{p-oxy-benzaldehyde.}}{p\text{.OH.C}_6\text{H}_4\text{.CHO}} + 6\text{H}_2\text{O}$$

$$= \underset{\text{Tyrosine.}}{p\text{.OH.C}_6\text{H}_3\text{.CH}_2\text{.CH(NH}_2\text{)COOH}} + \underset{\text{Urea.}}{\text{CO(NH}_2\text{)}_2} + \underset{\text{Ammonium oxalate.}}{(\text{COO})_2(\text{NH}_4)_2},$$

a reaction which affords a ready and easy explanation of

The Formation of Tyrosine in the Animal Body.

In 1886 M. Kossel published in the *Zeitschrift für Physiologische Chemie*, Band x., s. 258, a paper on a new base, *adenine*, which he had extracted from the spleen and from the pancreas, and which he stated existed also in all animal and vegetable cells. He considered that this body resulted from the breaking up of nucleine, the substance of which the nuclei of cells are composed. The composition of adenine is isomeric with prussic acid, its formula being $\text{H}_5\text{C}_5\text{N}_5$ or 5HCN, and since by the action of nitrous acid it can be transformed into hypoxanthine, it belongs to the uric acid series and may be represented by the formula—

$$5\text{HCN} = \begin{array}{l}\text{N=C(NH}_2\text{)}\\ |\quad\quad|\\ \text{CH C—NH}\\ \|\quad\|\\ \text{N—C—N}\end{array}\!\!>\text{CH}$$

Adenine.

its transformation into hypoxanthine being represented by the following equation—

$$\begin{array}{l}\text{N=C(NH}_2\text{)}\\ |\quad\quad|\\ \text{CH C—NH}\\ \|\quad\|\\ \text{N—C—N}\end{array}\!\!>\text{CH} + \text{HNO}_2 = \begin{array}{l}\text{NH—CO}\\ |\quad\quad|\\ \text{CH C—NH}\\ \|\quad\|\\ \text{N—C—N}\end{array}\!\!>\text{CH} + \text{N}_2 + \text{H}_2\text{O}.$$

Adenine. Hypoxanthine.

Heated in a sealed tube with hydrochloric acid (sp. gr. 1·19) for from 12 to 14 hours, adenine is resolved into glycocoll, formic acid, carbonic acid gas, and ammonia,[11]

$$\underset{\text{Adenine.}}{\text{H}_5\text{C}_5\text{N}_5} + 8\text{H}_2\text{O} = \underset{\text{Glycocoll.}}{\text{CH}_2\text{(NH}_2\text{)COOH}} + \underset{\text{Formic acid.}}{2\text{H COOH}} + \text{CO}_2 + 4\text{NH}_3,$$

precisely what takes place when amino-malonic nitrile and two molecules of hydrocyanic acid are treated in the same way:—

$$\underset{\text{Amino-malonic nitrile.}}{3\text{HCN or CH(NH}_2\text{)(CN)}_2} + 4\text{H}_2\text{O} = \underset{\text{Glycocoll.}}{\text{CH}_2\text{(NH}_2\text{)COOH}} + \text{CO}_2 + 2\text{NH}_3$$

and $2\text{HCN} + 2\text{H}_2\text{O} = 2\text{H.COOH} + 2\text{NH}_3$.

The relationship therefore between amino-malonic nitrile and adenine may be represented as follows:—

$$3\text{HCN} = \text{CH(NH}_2\text{)(CN)}_2 \text{ or } \begin{array}{l}\text{N=C(NH}_2\text{)}\\ \diagdown\quad|\\ \quad\text{C}\\ \quad\|\\ \quad\text{C}\diagup\end{array}\!\!>\text{NH}$$

and

$$\begin{array}{l}\text{N=C(NH}_2\text{)}\\ \diagdown\quad|\\ \quad\text{C}\\ \quad\|\\ \quad\text{C}\diagup\end{array}\!\!>\text{NH} + 2\text{HCN} = \begin{array}{l}\text{N=C(NH}_2\text{)}\\ |\quad\quad|\\ \text{CH C—NH}\\ \|\quad\|\\ \text{N—C—N}\end{array}\!\!>\text{CH or 5HCN.}$$

Amino-malonic nitrile. Adenine.

The synthesis, therefore, given above of tyrosine from amino-malonic nitrile and two molecules of hydrocyanic acid will be equally applicable to its synthesis from adenine, and consequently in the animal body the result of the combination of this substance with *p*.-oxy-benzaldehyde is a formation of tyrosine; urea and ammonium oxalate being eliminated.

$$\begin{array}{l}\text{N=C(NH}_2\text{)}\\ |\quad\quad|\\ \text{CH C—NH}\\ \|\quad\|\\ \text{N—C—N}\end{array}\!\!>\text{CH} + \underset{\text{p-oxy-benzaldehyde.}}{p\text{.(OH)C}_6\text{H}_4\text{.CHO}} + 6\text{H}_2\text{O}$$

Adenine.

$$= \underset{\text{Tyrosine.}}{p\text{.(OH)C}_6\text{H}_4\text{.CH}_2\text{.CH(NH}_2\text{).COOH}} + \underset{\text{Urea}}{\text{CO(NH}_2\text{)}_2} + \underset{\text{Ammonium oxalate.}}{(\text{COO})_2(\text{NH}_4)_2}.$$

Cambridge.

[10] The amount of potassium cyanide and of barium hydrate here employed are both in excess of the molecular quantity required.

[11] Martin Krüger: Zeitschrift für Physiologische Chemie, Band xvi., s. 160.

SOME INVESTIGATIONS ON THE NERVOUS MANIFESTATIONS OF ACUTE RHEUMATISM.[1]

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AND

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IN the first place we must thank the council for permission to bring this paper before your society and for an opportunity which we greatly appreciate. We also wish to say that our communication has been somewhat altered in form and arrangement because a feeling has been expressed that the entire subject of the causation of acute rheumatism should be thrown open to discussion. Our original intention had been to devote this paper chiefly to some difficult points in the study of this disease by giving an account of an investigation upon a very remarkable case rather than to dwell upon an aspect which we feared that we had already laboured to the point of weariness. Now, however, our intentions are to commence this paper by putting before you our present attitude towards the etiology of acute rheumatism and answering some of the objections that have been raised against our interpretation, for we feel that if we do not take this precaution the particular points bearing upon the nervous system which are the subject of this paper will seem to rest upon an insecure basis.

PART I.—THE ETIOLOGY OF ACUTE RHEUMATISM.

Five years ago in a paper published in THE LANCET[2] we claimed that we had proved that a diplococcus was a cause of rheumatic fever—a cause that had been hazarded by others in England, Germany, and France before the publication of our article.[3] Two years later before the Royal Medical and Chirurgical Society[4] we showed that rheumatic fever might be a cause of malignant as well as so-called simple endocarditis. Since then and up to the present time we have been gradually filling in the gaps in our knowledge and strengthening the weaker links in the chain of proof. Our position now has not altered: we still firmly maintain that this diplococcus is a cause of rheumatic fever; and further, we believe it to be the only bacterial cause; we also maintain that rheumatic fever is a cause of malignant endocarditis.

These views clearly imply that we hold that there is a definite disease—rheumatic fever. We do firmly believe this and hold that it is as definite a disease as tuberculosis. There are, admittedly, cases of rheumatic fever that are most difficult to differentiate, but they are no more numerous or more puzzling than are difficult cases of tuberculosis or typhoid fever. These views imply, too, that we have satisfied Koch's postulates. We believe that we have done so, and at various societies in London and at the International Congress in Madrid[5] we have demonstrated the micro-organism, its pure cultures, and its presence in the human and animal tissues damaged by rheumatism. We have isolated it now from 32 cases of undoubted rheumatic fever and the disease can be produced not only in rabbits but, as Vernon Shaw[6] has shown with one of our cultures, in monkeys also.

On the other hand, we have never maintained that this diplococcus was specific except in so far that it is, in our opinion, *the only bacterial cause of a specific disease*. We set ourselves to prove that it was a cause of a specific disease and left for future investigation the next step—the demonstration of a distinctive laboratory test for the micro-organism. A very different undertaking this one, yet only too often confused with the first; indeed, we venture to put this question prominently before the meeting: Does a demonstration of a bacterial cause of a disease demand the demonstration of a specific test for the bacterium?

We named the micro-organism the "diplococcus rheumaticus"—a name which has aroused a little criticism. Yet it is a reasonable and accurate name and for these reasons, in our opinion, the best name. It is reasonable because the bacterium is a cause of rheumatic fever, and it is accurate because a diplococcus expresses the usual appearance of the micro-organism. Some hold that the name is badly chosen, because it implies that the micro-organism is specific, but clearly it in no way interferes with the appearance on the scene of a spirochæte or trypanosoma rheumaticus. Others hold that it is badly chosen because the adjective "rheumaticus" implies that rheumatism is a definite disease; our answer to this is that acute rheumatism or rheumatic fever is a definite disease, and that if the term rheumatism has any accurate meaning it should have one corresponding to that which the term tuberculosis bears in relation to acute tuberculosis or tuberculous fever.

There are some who believe that rheumatic fever is not the result of an infection. They ought, we think, to demonstrate some non-infective cause and then to explain the coincidence that a bacterium, which has been found in the arthritis, endocarditis, pericarditis, subcutaneous nodules, pleurisy, pneumonia, peritonitis, and nephritis of rheumatic fever, is able to produce similar lesions in animals. Should they look upon all these lesions as complications they should define rheumatic fever when these lesions are put aside as epi-phenomena. Many more believe that rheumatic fever is a result of many different infections. If one other micro-organism even can be said to have fulfilled Koch's postulates with reasonable constancy someone should bring forward the evidence in its favour by a clear and decisive demonstration. Lastly, there are others who believe rheumatic fever is a definite disease and that it is infective, but that the infection has not yet been demonstrated. This view naturally implies that the evidence in favour of this diplococcus is not convincing.

It is not convincing in the opinion of some because the diplococcus is not constantly present; indeed, they would go further and say it is generally conspicuous by its absence, or if it is present that it is only found after death. These objections we can only meet by a counter-statement, to the effect that it is found ante mortem and post mortem and that in suitably chosen cases it is found with remarkable constancy. We have ourselves found it in 32 cases and many others have isolated a diplococcus in acute rheumatism, notably, Ainley Walker[7] and Beatson, Beattie[8] and Vernon Shaw in this country, von Leyden,[9] Triboulet, and Coyon,[10] Wassermann, Predtetschensky,[12] Meyer,[13] Singer,[14] Allaria,[15] Jarvis,[16] Cole,[17] Longcope,[18] and Herry.[19]

Never easy to find, it is very difficult to discover if searched for, as it was searched for by Philipp,[20] in unlikely places such as the blood and arthritic exudations. The micro-organism multiplies and flourishes in the local lesions and the blood stream is only a channel of conduction; further, rheumatic septicæmia, as clinical experience teaches us, is rare, although two such instances have occurred in our experience. Apart from these very exceptional instances we have several times isolated it from the blood ante mortem but the blood stream is certainly not a favourable site from which to isolate the micro-organisms in an ordinary case of acute rheumatism. Another unlikely place is the arthritic exudation, because the micrococci are

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[1] A paper read before the Neurological Society of the United Kingdom on Nov. 23rd, 1905.

[2] THE LANCET, Sept. 22nd and 29th, 1900.

[3] Klebs: Archiv für Experimentelle Pathologie, 1875, Band iv., p. 469. Wilson: Edinburgh Medical Journal, 1885, vol. xxx., p. 1105. Mantle: The Etiology of Rheumatism from a Bacterial Point of View, Brit. Med. Jour., 1887. Popoff: Meditz Prevalena k'Morskomu Sbomekie, 1887, p. 461. Von Leyden: Congress der Inneren Medicin, Berlin, July 2nd, 1894. Triboulet and Coyon: Comptes Rendus de la Société de Biologie, 1898, p. 214. Westphal, Wassermann, and Malkoff: Berliner Klinische Wochenschrift, 1899, No. 28, &c.

[4] Poynton and Paine: Transactions of the Royal Medical and Chirurgical Society, 1902.

[5] Transactions of the Fourteenth International Congress of Medicine, Section of Medicine, 1903.

[6] Vernon Shaw: Journal of Pathology and Bacteriology, December, 1903.

[7] Ainley Walker: Practitioner, 1903.

[8] Beattie: Brit. Med. Jour., December, 1904.

[9] Loc. cit. [10] Loc. cit. [11] Loc. cit.

[12] Predtetschensky: Vratch, 1901, No. 24.

[13] Fritz Meyer: Deutsche Medicinische Wochenschrift, 1901.

[14] Singer: Verhandlungen des Congresses für Innere Medicin, 1897, 1899.

[15] Allaria: Rivista Critica de Clinica Medica, 1901, No. 47.

[16] Jarvis: Thèse de Paris, 1902.

[17] Cole: Journal of Infectious Diseases, vol. i., No. 4, 1904.

[18] Longcope: American Journal of the Medical Sciences, 1904.

[19] Herry: La Semaine Médicale, Oct. 4, 1905.

[20] Philipp: Deutsches Archiv für Klinische Medicin, Band lxx., Hefte 1-3.

deposited in the areolar tissue below the free margin of the synovial membrane and the cells lining the synovial cavity are phagocytic. Not only this, numerous leucocytes also escape into the synovial tissues and aid in the destruction of the micrococci. Then, again, the amount of exudation is comparatively small and the exudate itself containing leucocytes and endothelial cells will destroy the bacteria. If these reasons are not sufficient we would add that rheumatic arthritis is the most easily overcome of all the lesions and that in animals which have been experimentally inoculated with the diplococcus and in which as a result arthritis has developed you will fail to isolate the micrococcus from the fluid when this arthritis is in the early stage. This has happened to us repeatedly. It is of considerable interest also, as bearing upon this point, that antitoxic sera free from bacteria may sometimes produce effusion into joints and this makes it very probable that the poisons formed by the diplococci in the synovial tissue can of themselves produce an effusion into the synovial cavity. Dr. Beattie has kindly sent us a note from a further research which he has not yet published of a case in which he found in a man dead from rheumatic fever that the exudation was sterile but the congested areas of the synovial membrane, removed with all precautions, gave a pure growth of the diplococcus. This is a most striking independent proof of our assertion.

Although, then, the arthritic exudation is not an easy fluid in which to find the diplococcus, yet it can be found, and has been found, by ourselves and others both ante mortem and post mortem. On the other hand, it can only be a fair question, if we maintain that the micro organism can be found in suitable cases with remarkable constancy, to ask what are the suitable cases? They are acute and severe ones, in which the lining membranes of the serous cavities are greatly damaged or in which the type is malignant. Sero-fibrinous pericarditis and malignant cases of rheumatic endocarditis are excellent examples. We have only failed once in recent cases of fatal pericarditis when adhesions have not been extensive and in that case we had to deal with a hæmorrhagic exudation.

A good deal of criticism has been devoted to the nature of this micro-organism; this criticism is of secondary importance. Whether or not the diplococcus is a cause of rheumatic fever is clearly of first importance, but whether or not it is an altered streptococcus pyogenes is of secondary importance because no one can define the streptococcus pyogenes. This line of criticism, however, needs a few words of comment, not only because it has been freely used in this country and on the continent but because it illustrates that narrowness of vision with which so many view the subject of rheumatism. Take, for example, an admirable and recent investigation by Rufus Cole. Rufus Cole, having isolated a diplococcus from a case of rheumatic fever, proceeded to work as others, including ourselves, had done, with various streptococci isolated from conditions which were certainly not rheumatic, and thus concludes: "Arthritis and endocarditis may be produced by the intravenous inoculation of rabbits with streptococci from various sources, and the results are quite similar to those described as resulting from the inoculation of the so-called micrococcus or diplococcus rheumaticus." Can anyone, we ask, possibly say that lesions are quite similar until they can explain the details of the chemical processes which have produced them? Could any member of this or any other learned society venture to dogmatise upon the exciting cause of an early arthritis or endocarditis in man by looking at the lesion with the naked eye or even under the microscope? Could he, for example, say this is gonococcal, rheumatic, pneumococcal, or influenzal or staphylococcal?

Not, however, content with this conclusion, investigators working on these lines go further and say that the rabbit is quite useless as a test, for you can produce arthritis and endocarditis in it with various micrococci and the occurrence proves nothing. They forget monkeys as well as rabbits are susceptible to the rheumatic infection and the fact that the first two of Koch's postulates must be satisfied—you must find the organism in the human disease you are studying and isolate it from the lesions. No one has yet claimed that at present these two postulates can be ignored in studying the cause of rheumatism and it is obviously impossible to do so until the specific test for the bacterium has been discovered. Then is it so remarkable that the rabbit is susceptible to many causes of arthritis and endocarditis. Is rheumatism the only cause of these conditions in man Have not we heard, for instance, of gonorrhœal, staphylococcal, meningococcal, pneumococcal, scarlatinal, tuberculous and influenzal endocarditis and arthritis, yet is it quite useless to attach any importance to endocarditis and arthritis as evidences of rheumatism in man?

Another statement we have frequently heard is to the effect that this diplococcus is only an attenuated streptococcus pyogenes. What a confession this is of lack of clinical knowledge. Could anyone who has thoroughly and honestly studied acute rheumatism believe it to be the result of an attenuated anything? It is remarkable, too, how pyæmia has disappeared since the antiseptic treatment of wounds has been introduced and yet rheumatic fever cannot be said to be any less common. What is to be said of the scientific value of that widespread doctrine that salicylate of sodium is a test of rheumatism? We think that it assumes so much that is at present unknown that it cannot be considered to be even in the field of discussion.

The great difficulty at the present time is, then, to find a specific test or specific tests for this diplococcus by which we can recognise it from other streptococci and it is a difficulty that will probably test the most skilful bacteriologists and chemists. Gram's stain and morphological and cultural characteristics do not carry the weight they did; bacteriology is getting older and is more cautious with its use of the word "specific." We, however, maintain that a failure to find a specific laboratory test in no way alters the conclusions that the bacterium is a cause of acute rheumatism or that acute rheumatism is a specific disease. The best test of a bacterium, though not the most practically useful one, is the satisfaction of Koch's postulates. We should not like it, however, to be thought that we have neglected to attempt a differentiation ourselves, or have not appreciated the efforts of those investigators who have not been content to rest quietly under the assurance that rheumatism, pyæmia, erysipelas, septicæmia, and puerperal fever are all the same thing, only different.

The diplococcus has, in our opinion, these peculiarities:—

1. Morphologically, it is minute and smaller than the streptococcus pyogenes. The diplococcal arrangement in early cultures is more constant and it does not retain Gram's stain so well. Lastly, it resists drying in the most remarkable way for six months or even longer, which we believe is very different from the character of the streptococcus lanceolatus.

2. Physiologically, it causes an early production of acid and a greater production of acid than the streptococcus pyogenes. On this account it produces a firm clot in milk. The diplococcus will grow in a filtered culture of the streptococcus pyogenes. Ainley Walker and Ryffel[21] in a most interesting research have demonstrated that a considerable amount of formic acid is produced by, and in, these bacteria. Allusion, too, must be made to a recent paper by Gordon in THE LANCET[22] upon a ready method of differentiating streptococci by their ability to decompose various chemical compounds belonging to the carbohydrate, glucoside, and polyatomic alcohol series, in each case with an acid reaction. No direct reference is made to the streptococcus of rheumatism, but the general conclusion of this investigator is interesting. He writes: "The chief object of my paper is to show that the individuality of streptococci is real, not apparent."

3. Experimentally, rabbits are more resistant, and arthritis and endocarditis are much more constant. It is also difficult to raise the virulence. When it produces rapid death in a rabbit we have not observed that remarkable softening of the tissues and staining of the blood-vessels seen in severe streptococcus pyogenes infections. And we have never seen abscesses in the kidneys, heart wall, spleen, or liver.

These may be small points and are certainly far from specific tests, but taken together they have, we believe, some value. It certainly seems to us that the most satisfactory working theory at present is to look upon rheumatism and its allies as one looks upon a group of chemical elements, such as chlorine, bromine, iodine, and fluorine—that is to say, there is much in common among them, yet each constituent of the group is in itself peculiar. To summarise, we hold that there is a great infective process, the rheumatic, to be placed among that series of infective processes where the staphylococcus, streptococcus, pneumococcus, and

[21] Walker and Ryffel: Brit. Med. Jour., Sept. 19th, 1903.
[22] Gordon: THE LANCET, Nov. 11th, 1905, p. 1400.

gonococcus are to be found, and that the infective agent is a diplococcus with, in all probability, some peculiar characters.

PART II.—CHOREA.

Passing now to the particular investigations which prompted us to ask for your leave to read this paper the first have reference to chorea. In May, 1901, in a paper in THE LANCET, we elaborated in some detail the view that rheumatic chorea was a result of the diplococcus infection. We speak advisedly of rheumatic chorea, not being prepared to maintain that all chorea is rheumatic, for it may be that other infections, especially of the streptococcal group, can also sometimes produce this condition and many also believe that fright is an exciting cause. With regard to this latter point, as a result of personal inquiry into the history of 250 cases of chorea under 13 years of age, we support Dr. D. B. Lees's opinion that fright, as an exciting cause, is greatly overrated, but we believe that it is, as many authorities have long maintained, a predisposing one of importance. It hardly need be said that we believe implicitly in the teaching of those who have held that the great majority of cases of chorea are rheumatic, and rheumatic in the sense that the chorea is an actual manifestation of the disease. Here, again, we would submit that the clinical evidence in favour of this view is overwhelming.

If then, for the moment, the diplococcus is accepted as a cause of rheumatic fever, the first essential in the explanation of rheumatic chorea is to bring forward evidence of its presence in the nervous system or general circulation when the rheumatism is active and has been the cause of death. Such evidence is slowly accumulating. Thus a diplococcus was isolated under such conditions by Dana[23] in 1894 and again in 1898 by Apert,[24] who then distinctly stated that he thought it was identical with the diplococcus discovered by Triboulet and Thiroloix in aggravated rheumatic fever. In 1899, Westphal, Wassermann, and Malkoff published their important case of a child, dead from rheumatic pericarditis and chorea, from whose pericardial and cerebro-spinal fluids was isolated a diplococcus which produced arthritis in a series of 80 rabbits. These observers maintained that this diplococcus was the cause of acute articular rheumatism. In 1900 we recorded the occurrence of choreiform movements in a rabbit as a result of an intravenous inoculation of the diplococcus, and in 1901 we verified the occurrence of a diplococcus in the cerebro-spinal fluid of a child who had died from severe rheumatism with chorea. Fritz Meyer, in 1901, with a diplococcus obtained from rheumatic angina faucium, produced irregular twitching movements in six rabbits. In 1903 Beaton and Ainley Walker twice isolated a diplococcus post mortem from the heart's blood and once ante mortem from the urine in rheumatic chorea, and in two of these cases produced arthritis and endocarditis. In 1903, at the International Congress,[25] we also brought forward a fatal case of rheumatism with chorea, in which we had isolated the diplococcus from the pericardial fluid and produced not only arthritis, as had Wassermann, but also pericarditis and endocarditis. In 1904 Beattie recorded the same occurrence with a diplococcus which he had independently isolated from a case of fatal rheumatism. In his case the diplococcus was isolated from the arthritic exudation and also produced choreiform movements in a rabbit.

Now, again, in two cases of rheumatic fever dying with symptoms of chorea we have isolated this diplococcus from the cerebro-spinal fluid. In one case the virulence of the cultures was not sufficient to produce any experimental effect; in the second case, however, not only was arthritis produced but also endocarditis and pericarditis—that is to say, a micro-organism circulating in the cerebro-spinal fluid during an acute attack of rheumatism with chorea was able to produce such lesions as arthritis, endocarditis, and pericarditis. This, we think, brings us a step nearer the elucidation of chorea, and owing to the kindness of Dr. Lees we are enabled to give a brief account of this case. A boy, aged nine years, who had suffered from acute rheumatism at three years of age, was admitted to St. Mary's Hospital under Dr. Lees on Nov. 22nd, 1904, in a second attack. Previously to his admission he had been ill for seven weeks with sore-throat, multiple arthritis, and general chorea, and he only lived two days in the hospital, dying with general pericarditis and violent chorea. The necropsy showed a pericardium bound down by recent and old adhesions but there was no endocarditis. The liver and kidneys were engorged, there was pleurisy with fibrino-plastic exudation, and the brain was hyperæmic.

This, then, may be looked upon as a case of severe rheumatic fever in which chorea was a notable manifestation at the time of death. Cultures were made from the blood in the heart, the pericardial and cerebro-spinal fluids, in milk bouillon. One tube of blood from the heart was sterile and one contained a pure growth of the diplococcus, the tube with the cerebro-spinal fluid contained a pure growth, and the pericardial fluid contained the same micro-organism, together with the staphylococcus albus, from which it was separated by plate culture. Two inoculations were made from these cultures: (*a*) a small dose was injected subcutaneously into a small rabbit; and (*b*) a large dose was injected intravenously into a large rabbit. The first developed a small inflammatory nodule at the site of inoculation, which disappeared gradually without any constitutional symptoms. The second, injected intravenously, died in 24 hours. Diplococci were present in the blood. All the organs were firm and not soft as in the case of a septicæmia from a septic infection. The diplococcus was isolated and again cultivated. Another series of cultures was then made from the original strain and three more inoculations were made on Nov. 30th. (1) A five cubic centimetre bouillon culture was injected intravenously into rabbit No. 3; (2) the contents of three blood serum tubes were injected intravenously into rabbit No. 4; and (3) the contents of three blood agar tubes into rabbit No. 5. The last of these three animals developed arthritis on the third day and died on the fifth from general pericarditis, cardiac dilatation, and mitral endocarditis. We have been asked whether we have also obtained the diplococcus from the brain but the question is impossible to answer, because one cannot exclude the possibility of either pia mater or cerebro-spinal fluid being included in the fragments.

There have been a certain number of observations pointing to the presence of the staphylococcus aureus as a cause of chorea. We have not ourselves been able to trace such a connexion in rheumatic chorea and in a recent paper by Poynton and Vernon Shaw[26] some evidence was brought forward to show that this micrococcus was not a cause of rheumatism and rheumatic chorea. Nevertheless it is quite possible that the aureus infection may produce chorea if we admit that other infections allied to the rheumatic may be, in exceptional cases, exciting causes.

We would ask you now for the moment to accept the view that rheumatic chorea is a result of the diplococcus infection, for then we can pass on to the next consideration—the nature of the morbid lesions. At the outset we are confronted with this difficulty: we know that the lesions in rheumatic fever are of the type of pyæmic lesions—that is, they are local infections of various organs—and we also know that there is a variable amount of general systemic poisoning as evidenced by the rapid anæmia. Applying this knowledge to the nervous system we have two possibilities. Chorea may be a result of local lesions comparable to other *local* rheumatic lesions, or it may be that the delicate nervous tissues are exceptionally sensitive to the *general* rheumatic poisoning. We incline to the view that chorea is a result of numerous slight local lesions, and it will be at once apparent that we are thus led to a slight modification of the original views of that illustrious neurologist, Dr. J. Hughlings Jackson. To a slight modification in that we do not suppose that there is actual embolism, but rather the occurrence of small focal lesions external to the blood capillaries caused by the escape of the diplococci which are driven by the blood stream into these positions. The local changes around the capillaries might cause hæmorrhage, thrombosis, perivascular exudation, and in chronic cases perivascular fibrosis. The poisons that are elaborated would probably cause fatty and other destructive changes in the nervous tissues themselves. We should expect the pia mater to be definitely affected in chorea because of its analogy to the other serous membranes and because there are an enormous number of minute blood-vessels in this membrane.

If, on the other hand, the general systemic poisoning is responsible for chorea one almost despairs of getting any nearer the solution of this problem until the chemistry of rheumatism is elucidated, for these general systemic poisonings are beyond the reach of morbid anatomy.

[23] Dana: American Journal of the Medical Sciences, 1894, p. 31.
[24] Apert: Société de Biologie, Jan. 20th, 1898.
[25] Poynton and Paine: Transactions of the Fourteenth International Congress of Medicine, Section of Pediatrics, 1903.
[26] Poynton and Shaw: Transactions of the Pathological Society 1904.

Working along these lines we have attempted by intravenous injections of formic acid in rabbits to produce choreiform movements, but failed to obtain any such result. Reichart[27] has recently published accounts of a careful investigation of two brains in cases of fatal chorea. The bacteriological investigations were negative, but in both cases he found small hæmorrhages scattered irregularly throughout the brains; there were dilatation of blood-vessels and perivascular exudation of cells. This observer also found fatty changes in the nerve fibres of the brain and cord. These are changes such as would be associated with an infection of the rheumatic type. The finding of such local lesions to some extent supports the view that chorea is a result of such changes rather than of a general cerebral poisoning by the toxins. A more convincing point in the pathology of chorea would be the demonstration of the diplococci in the pia mater or brain in cases of chorea. Our opportunities for doing this have been few. At a meeting of

FIG. 1.

Rheumatic fever with pericarditis and chorea. Film of the pia mater, showing A, diplococci in the pia mater, and B, a capillary blood-vessel. Zeiss, obj. 1/12th, oc. 12.

the Pathological Society in December, 1900,[28] we demonstrated diplococci in the motor cortex of a case of very severe chorea, but most unfortunately we did not, when we made the necropsy, recognise the relation of the diplococcus to rheumatism. In both our recent cases alluded to here we found them in the pia mater as we foretold from animal experiment in 1900—viz., in the neighbourhood of the capillary blood-vessels. We show the specimens to-night (Fig. 1). There is no doubt in our minds that the destruction of these diplococci in the pia mater must be rapid, for chorea is a lesion comparable to rheumatic arthritis in the tendency to complete recovery, and, as we have already pointed out, it is no easy task to find them in acute arthritis. It is, we think, encouraging to have shown a diplococcus in three consecutive cases of chorea and in the last case we know that this diplococcus can produce arthritis and pericarditis in rabbits and could be isolated from the cerebro-spinal fluid.

Lastly, there is placed under the microscope a section of a mitral valve from a case of early endocarditis with very severe chorea which illustrates how easily the brain could be infected from the blood stream. These have been our only opportunities and neither of the last two cases should we have chosen for demonstration, for they were not essentially cases of fatal chorea but rather fatal pericarditis with chorea. During the last five years we have never had an opportunity for investigating one of those rare cases of fatal chorea. We have not attempted lumbar puncture for we cannot persuade ourselves to do this simply for purposes of investigation and our views upon the probability of success of this method are expressed in our views upon arthritis. In spite of this, the fact that we have succeeded in demonstrating the diplococcus in cases in which death occurred with chorea does, we believe, add another link to the chain of evidence, and it is the more suggestive because we discovered them in the pia mater near capillary blood-vessels in the rabbit which showed twitching movements.[29]

These experimentally produced twitching movements need a passing mention. Originally described by ourselves in 1900, we then in a very guarded manner suggested that the movements in the rabbit were analogous to chorea in a child. Meyer and Beattie independently verified the occurrence and noticed twitching movements. Cole later produced twitching movements in rabbits by the injection of other streptococci and states that the movements had no resemblance to chorea. In our case the movements were of that type and entirely different from convulsive movements or the twitchings of a dying animal; in fact, we killed the animal in order to demonstrate the diplococci in the brain or pia mater. The search, it may be added, was most tedious and difficult, as might be supposed when it is remembered how minute is the size of this diplococcus.

To summarise, we believe that eventually rheumatic chorea will prove to be a local infection of the nervous system and that most of its symptoms are the result of a slight meningo-encephalitis and possibly meningo-myelitis. Our reasons for this belief are: 1. We have isolated and cultivated the diplococcus from the cerebro-spinal fluid in four cases of fatal rheumatism, in three of which there was chorea at the time of death. 2. We have produced twitching movements, arthritis, endocarditis, and pericarditis by intravenous injections of the diplococcus into rabbits. 3. We have demonstrated the presence of diplococci three times in the cerebral pia mater and once in the brain from cases of chorea. 4. We have demonstrated them in the brain and pia mater of the rabbit that had shown the twitching movements.

PART III.—RHEUMATIC MENINGITIS (?)

Our last case is a most interesting one. A well-made and intelligent boy, 13 years old, was admitted into University College Hospital on August 26th, 1904, suffering from arthritis of the ankles and knees and from pain across the chest upon drawing breath. The first attack of pain had occurred four days before his admission, the ankles had commenced to swell three days before, and the knees upon the day previous. The family history showed that the boy's father had suffered from rheumatic fever but the patient himself, except for an attack of measles and an operation for adenoids, had enjoyed excellent health. His condition on admission appeared to be a very ordinary attack of rheumatic fever. The temperature was 103·6° F. and the arthritis was of the usual type, the heart was dilated, and there was a definite systolic mitral murmur which was conducted to the left axilla. Further, rest and salicylate of sodium rapidly reduced the temperature and by the 30th, that is in four days, all pain and swelling had disappeared. From that date until Sept. 17th, nearly a period of three weeks, his convalescence was uninterrupted, while in order to prevent a relapse small doses of salicylate of sodium were

[27] Reichart: Deutsches Archiv für Klinische Medicin, 1902, p. 504.
[28] Poynton and Paine: Transactions of the Pathological Society, 1901.
[29] Poynton and Paine: Some Further Investigations upon Rheumatic Fever, THE LANCET, May 4th, 1901, p. 1260.

continued. On the 17th, without any apparent cause, he complained of headache; he was sick, and his temperature rose to 102·4°. The next day, although better in the morning, he again vomited in the afternoon and suffered severe pain in his head. That evening he was drowsy and his temperature rose again to 102·6°. The bowels were constipated and for this reason an enema was given, after which he collapsed and became cyanosed and almost pulseless. At 8 A.M. on the 19th he became unconscious, with fixed dilated pupils and general muscular rigidity, alternating with flaccidity. His skin, though hot, was moist; his temperature in the axilla at 8 A.M. was 101°, and at 11 A.M. 102·4°. The temperature was now taken in the rectum and also twice with different thermometers in the groin and axilla. In the rectum the temperature was 106·4°; in the other situations it was still 102·4°. All efforts at treatment were fruitless and the boy died comatose at 7.40 that evening. The difference in the temperature in the axilla and in the rectum of over 4° F. is remarkable and we believe very exceptional; in fact, if the rectal temperature had not been taken the hyperpyrexial element in the illness would certainly have escaped notice. The clinical aspect of this case was a very puzzling one, not only on this account but because the symptoms supervened without warning at a time when all believed the boy was quite convalescent. There are, however, other cases on record in which the supervention of cerebral rheumatism has been recorded during convalescence, and it is well known that this condition may occur when the first symptoms of rheumatism are slight as well as when they are severe. The most probable diagnosis thus appeared to be cerebral rheumatism.

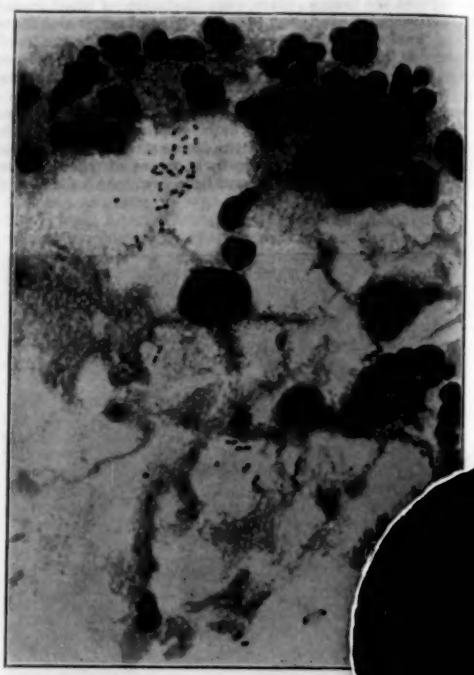
The necropsy was made 15 hours after death. No changes were found in the affected joints. There was a slight excess of clear fluid in the pericardium and the mitral valve showed early endocarditis in the process of healing. There was also slight pleuro-pericarditis on the left side which was of recent origin. These morbid changes, we would point out, were

FIG. 2.

Cerebral meningitis in rheumatic fever. Film from the cerebro-spinal fluid, showing diplococci. Zeiss, obj. $\frac{1}{12}$th, oc. 12.

entirely in accord with the occurrence of an attack of recent acute rheumatism. In no part of the body could any focus of suppuration be seen. Examination of the brain showed a condition of meningitis almost entirely basal in distribution and not suppurative. Except that it spread further than is usually the case in post-basic meningitis, the appearance was almost identical with that condition. A good deal of turbid fluid was present together with flakes of exudation over the medulla, pons, and cerebellum (Fig. 2). There was also a general spinal meningitis (Fig. 3). The actual films are exhibited to-night and show minute diplococci in numbers.

FIG. 3.



Film from the exudation of spinal meningitis in rh
showing diplococci. Zeiss, obj. $\frac{1}{12}$th, oc.

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This case was clinically and experimentally very exceptional and we have brought it forward simply as a contribution to the subject of meningitis in the rheumatic. Had our paper been brought forward in its original form we should have discussed the various explanations of the case and the details of its bacteriology, but to do so now would be out of place. We bring it forward to-night because we are inclined to the belief that it was a true rheumatic meningitis in spite of the fact that we observed capsulation of the diplococci in the rabbit's blood, which we admit has hitherto been regarded as a distinguishing feature of the pneumococcus. In any case it is worthy of record should others happen upon such a remarkable condition. Lastly, if for the moment you will accept this case as a true rheumatic meningitis the question arises as to how we are

to link together these three remarkable rheumatic lesions of the brain termed (1) rheumatic chorea; (2) rheumatic hyperpyrexia or cerebral rheumatism; and (3) rheumatic meningitis. In rheumatic hyperpyrexia the rule is that no gross macroscopical lesion is found. Of this we believe there is no doubt, for we have referred to a number of such cases since the time of Fuller and have again and again found the same record of an absence of gross lesions. Nevertheless, recent research has shown that there are very grave microscopical changes. Thus Josué and Salomon[30] in 1903 found in such a case diplococci in the pia mater and in some of the cerebral blood capillaries, and demonstrated by Nissl's method profound changes in the nerve cells of the frontal and motor cortex. In October of this year Gandy and Borgnait Legneule[31] in a rapidly fatal case found diffuse chromatolysis. To us, then, it appears that this nervous lesion is an acute rheumatic toxæmia in contrast to the multiple and slight local lesions we believe exist in chorea. Rheumatic meningitis we would place between these two lesions, because there is on the one hand profound poisoning and on the other a severe local lesion. Are these nervous lesions, it may be asked, in any way comparable to rheumatic lesions of other organs? We believe so, and would venture the following comparison:—

Mild rheumatic carditis and chorea.

Severe rheumatic pericarditis and rheumatic meningitis.

Acute fatal rheumatic cardiac dilatation and acute fatal rheumatic hyperpyrexia.

THE LEPTUS AUTUMNALIS AND ITS SKIN LESION.

BY WILLIAM MACLENNAN, M.B., C.M. GLASG.,
...R ON MATERIA MEDICA AND THERAPEUTICS, QUEEN MARGARET ...EGE, UNIVERSITY OF GLASGOW; ASSISTANT PHYSICIAN, WESTERN INFIRMARY, GLASGOW.

...eral summer holidays, spent in the month of ...ally at east coast resorts in Scotland, there ...' my notice a troublesome skin ailment, ...fter year, a large number of visitors and ... first summer in which I noticed this ...n irritation was in 1896 when my own ...al friends were attacked. Hardly a summer ...d without an opportunity arising of studying ...ction. Before I came to recognise its true ... inquired of the local practitioners as to its ...nd cause and I found that for the most part it ...dered to be an eczema or an urticaria, or at any rate ...ooked upon it as a skin lesion produced by some error ... diet, change of air, or the different mode of life. But several attacks of this affection which I, or some member of my family, contracted in successive summers, convinced me that the ailment had no connexion either with "urticaria" or with "eczema," and that it had no relationship to the regimen, to the different air, or to the condition of the general health. Very careful attention to the nature of the lesion and to the development of the disease suggested that it could have no other than a parasitic origin. The capture of the parasite itself demonstrated this to be the case and microscopic examination showed it to be the leptus autumnalis. Medical literature affords very incomplete records of the leptus autumnalis or the skin affection it produces. Those accounts of it which do exist are inadequate and vary greatly. It is this consideration which prompts me to put on record my own somewhat extensive observations of the leptus and the lesions it produces.

Almost every observer who has written about the leptus maintains that it does not burrow into the true skin but rather attaches itself to the epidermis of its host. According to Professor Braun the animal injures the skin and through the opening (which sometimes corresponds with the opening of a sweat or oil gland) sucks the blood of the host by means of its long hypopharynx imbedded in the skin. Braun states that there is produced in the skin in the neighbourhood of the hypopharynx a cylindrical thickened tube, ring-shaped at the free end, which till now has been mostly regarded as a proboscis of the leptus but which really does not belong to the parasite but to the host, just as the branched chitin tubes in arthropods result from the sting of mites. Brocq in his "Maladie de Peau" writes that the leptus fixes itself principally at the base of hairs and follicles in which it imbeds its mandibles, whilst the posterior part of the body forms a red projection, around which develops a slight inflammation characterised by papules. As soon as it has fixed itself its abdomen dilates little by little till it has attained five times its normal dimensions. Ziemssen, like most other observers, states that if we inspect several efflorescences more closely we can, almost without exception, perceive near their centres a slight elevation which is conspicuous by its yellowish or red colour. This writer also says that when we seek to lift this elevation off with the point of a needle or to scrape it away we can often see with the naked eye an actively moving animalcule. In the "Dictionnaire des Sciences Médicales" Laboulbene, however, mentions that the leptus is known in country districts under the names of *bête d'août*, *rouget*, or *pouceron rouge*. Living on plants, it attacks the legs of people who lie or walk on the grass, penetrates into the skin, and there determines some lively itching.

Although the literature on this subject is somewhat scanty it is evident that most writers have hitherto believed that the leptus never burrows into the true skin but rather attaches itself, by means of its mandibles, to the surface of the skin, from which it sucks the blood of its host, while the posterior part of its body can be seen projecting through the epidermis. That this is erroneous, or true only of some other parasite, my observations convince me. Indeed, it would be strange if the leptus autumnalis did not burrow deeply. A microscopic examination of the head of this parasite shows at a glance how admirably it is adapted for puncturing and penetrating the tissues of its victim. The mandibles are very powerful and, relatively to the size of the animal, possessed of enormous leverage. They can work in scissor-like fashion with great rapidity (cutting with the outer edges) and dissect a canal down which the body passes. Once they have penetrated it is impossible for these parasites to retreat. The leptus is provided with a similar arrangement of dorsal spines as that presented by the "itch" parasite. It is just this deep penetration which makes the lesion of the leptus so markedly different from that of the acarus and makes the presence of a diffuse pruriginoid eruption conspicuous by its absence. The leptus autumnalis is, according to most writers, either the six-legged larva of the thrombidium holosericeum or that of the tetranychus. Hanstein, however, denies that it is the larva of the latter. The mature animal will probably have eight legs. As will be seen from the accompanying illustration (which is reproduced from a photograph of the parasite) the legs are jointed

Illustration from photomicrograph, magnified 100 diameters.

and taper to a fine point, from the extremity of which there project three slender bird-like claws. A specimen captured alive showed it, under the microscope, to be a very rapidly moving animal. Anyone who looks into this subject will find that the illustrations and descriptions of the leptus autumnalis given by different writers vary considerably. It therefore appears likely that these observers have been describing different varieties of parasites belonging to the thrombidiidæ.

[30] Josué and Salomon at a meeting of the Paris Hospitals Medical Society, July 25th, 1905.

[31] Gandy and Borgnait Legneule at a meeting of the Hospitals Medical Society, Paris, Oct. 27th, 1905.

continued. On the 17th, without any apparent cause, he complained of headache; he was sick, and his temperature rose to 102·4°. The next day, although better in the morning, he again vomited in the afternoon and suffered severe pain in his head. That evening he was drowsy and his temperature rose again to 103·6°. The bowels were constipated and for this reason an enema was given, after which he collapsed and became cyanosed and almost pulseless. At 8 A.M. on the 19th he became unconscious, with fixed dilated pupils and general muscular rigidity, alternating with flaccidity. His skin, though hot, was moist; his temperature in the axilla at 8 A.M. was 101°, and at 11 A.M. 103·4°. The temperature was now taken in the rectum and also twice with different thermometers in the groin and axilla. In the rectum the temperature was 106·4°; in the other situations it was still 103·4°. All efforts at treatment were fruitless and the boy died comatose at 7.40 that evening. The difference in the temperature in the axilla and in the rectum of over 4° F. is remarkable and we believe very exceptional; in fact, if the rectal temperature had not been taken the hyperpyrexial element in the illness would certainly have escaped notice. The clinical aspect of this case was a very puzzling one, not only on this account but because the symptoms supervened without warning at a time when all believed the boy was quite convalescent. There are, however, other cases on record in which the supervention of cerebral rheumatism has been recorded during convalescence, and it is well known that this condition may occur when the first symptoms of rheumatism are slight as well as when they are severe. The most probable diagnosis thus appeared to be cerebral rheumatism.

The necropsy was made 15 hours after death. No changes were found in the affected joints. There was a slight excess of clear fluid in the pericardium and the mitral valve showed early endocarditis in the process of healing. There was also slight pleuro-pericarditis on the left side which was of recent origin. These morbid changes, we would point out, were

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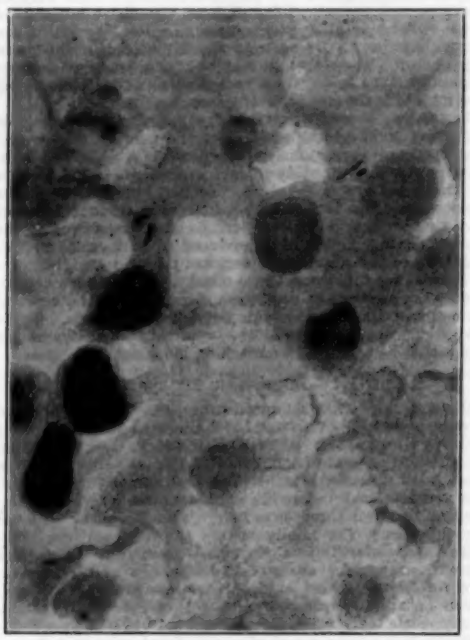

Cerebral meningitis in rheumatic fever. Film from the cerebro-spinal fluid, showing diplococci. Zeiss, obj. $\frac{1}{12}$th, oc. 12.

entirely in accord with the occurrence of an attack of recent acute rheumatism. In no part of the body could any focus of suppuration be seen. Examination of the brain showed a condition of meningitis almost entirely basal in distribution and not suppurative. Except that it spread further than is usually the case in post-basic meningitis, the appearance was almost identical with that condition. A good deal of turbid fluid was present together with flakes of exudation over the medulla, pons, and cerebellum (Fig. 2). There was also a general spinal meningitis (Fig. 3). The actual films are exhibited to-night and show minute diplococci in numbers.

FIG. 3.

Film from the exudation of spinal meningitis in rheumatic fever, showing diplococci. Zeiss, obj. $\frac{1}{12}$th, oc. 12.

And we would point out that even in this extraordinary and virulent case it was by no means easy to find the micrococci in the pial tissues.

Cultures were taken from the blood in the heart, the pericardial and cerebro-spinal fluids, and brain. The cultures from the cerebro-spinal fluid contained a pure growth of a diplococcus in bouillon milk and glycerine agar. The virulence of these cultures was higher than is usually the case with the diplococcus and two rabbits inoculated with large doses died comatose within 24 hours. The blood film showed a minute diplococcus which was capsulated. The diplococcus was isolated from the blood of one and a small dose injected intravenously into a third rabbit. After showing some loss of health this animal recovered. Return was made to the original culture and again a large dose produced rapid death, but a small dose was recovered from. After two months' interval a large dose was again used, with the result that the rabbit developed arthritis of the shoulder joints and was killed in the convalescent stage. The diplococcus was recovered from the damaged joints.

This case was clinically and experimentally very exceptional and we have brought it forward simply as a contribution to the subject of meningitis in the rheumatic. Had our paper been brought forward in its original form we should have discussed the various explanations of the case and the details of its bacteriology, but to do so now would be out of place. We bring it forward to-night because we are inclined to the belief that it was a true rheumatic meningitis in spite of the fact that we observed capsulation of the diplococci in the rabbit's blood, which we admit has hitherto been regarded as a distinguishing feature of the pneumococcus. In any case it is worthy of record should others happen upon such a remarkable condition. Lastly, if for the moment you will accept this case as a true rheumatic meningitis the question arises as to how we are

to link together these three remarkable rheumatic lesions of the brain termed (1) rheumatic chorea; (2) rheumatic hyperpyrexia or cerebral rheumatism; and (3) rheumatic meningitis. In rheumatic hyperpyrexia the rule is that no gross macroscopical lesion is found. Of this we believe there is no doubt, for we have referred to a number of such cases since the time of Fuller and have again and again found the same record of an absence of gross lesions. Nevertheless, recent research has shown that there are very grave microscopical changes. Thus Josué and Salomon[30] in 1903 found in such a case diplococci in the pia mater and in some of the cerebral blood capillaries, and demonstrated by Nissl's method profound changes in the nerve cells of the frontal and motor cortex. In October of this year Gandy and Borgnait Legneule[31] in a rapidly fatal case found diffuse chromatolysis. To us, then, it appears that this nervous lesion is an acute rheumatic toxæmia in contrast to the multiple and slight local lesions we believe exist in chorea. Rheumatic meningitis we would place between these two lesions, because there is on the one hand profound poisoning and on the other a severe local lesion. Are these nervous lesions, it may be asked, in any way comparable to rheumatic lesions of other organs? We believe so, and would venture the following comparison:—

Mild rheumatic carditis and chorea.

Severe rheumatic pericarditis and rheumatic meningitis.

Acute fatal rheumatic cardiac dilatation and acute fatal rheumatic hyperpyrexia.

THE LEPTUS AUTUMNALIS AND ITS SKIN LESION.

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DURING several summer holidays, spent in the month of August principally at east coast resorts in Scotland, there has come under my notice a troublesome skin ailment, affecting, year after year, a large number of visitors and residenters. The first summer in which I noticed this troublesome skin irritation was in 1896 when my own family and several friends were attacked. Hardly a summer since has passed without an opportunity arising of studying this skin affection. Before I came to recognise its true nature I had inquired of the local practitioners as to its frequency and cause and I found that for the most part it was considered to be an eczema or an urticaria, or at any rate they looked upon it as a skin lesion produced by some error of diet, change of air, or the different mode of life. But several attacks of this affection which I, or some member of my family, contracted in successive summers, convinced me that the ailment had no connexion either with "urticaria" or with "eczema," and that it had no relationship to the regimen, to the different air, or to the condition of the general health. Very careful attention to the nature of the lesion and to the development of the disease suggested that it could have no other than a parasitic origin. The capture of the parasite itself demonstrated this to be the case and microscopic examination showed it to be the leptus autumnalis. Medical literature affords very incomplete records of the leptus autumnalis or the skin affection it produces. Those accounts of it which do exist are inadequate and vary greatly. It is this consideration which prompts me to put on record my own somewhat extensive observations of the leptus and the lesions it produces.

Almost every observer who has written about the leptus maintains that it does not burrow into the true skin but rather attaches itself to the epidermis of its host. According to Professor Braun the animal injures the skin and through the opening (which sometimes corresponds with the opening of a sweat or oil gland) sucks the blood of the host by means of its long hypopharynx imbedded in the skin. Braun states that there is produced in the skin in the neighbourhood of the hypopharynx a cylindrical thickened tube, ring-shaped at the free end, which till now has been mostly regarded as a proboscis of the leptus but which really does not belong to the parasite but to the host, just as the branched chitin tubes in arthropods result from the sting of mites. Brocq in his "Maladie de Peau" writes that the leptus fixes itself principally at the base of hairs and follicles in which it imbeds its mandibles, whilst the posterior part of the body forms a red projection, around which develops a slight inflammation characterised by papules. As soon as it has fixed itself its abdomen dilates little by little till it has attained five times its normal dimensions. Ziemssen, like most other observers, states that if we inspect several efflorescences more closely we can, almost without exception, perceive near their centres a slight elevation which is conspicuous by its yellowish or red colour. This writer also says that when we seek to lift this elevation off with the point of a needle or to scrape it away we can often see with the naked eye an actively moving animalcule. In the "Dictionnaire des Sciences Médicales" Laboulbene, however, mentions that the leptus is known in country districts under the names of *bête d'août*, *rouget*, or *pouceron rouge*. Living on plants, it attacks the legs of people who lie or walk on the grass, penetrates into the skin, and there determines some lively itching.

Although the literature on this subject is somewhat scanty it is evident that most writers have hitherto believed that the leptus never burrows into the true skin but rather attaches itself, by means of its mandibles, to the surface of the skin, from which it sucks the blood of its host, while the posterior part of its body can be seen projecting through the epidermis. That this is erroneous, or true only of some other parasite, my observations convince me. Indeed, it would be strange if the leptus autumnalis did not burrow deeply. A microscopic examination of the head of this parasite shows at a glance how admirably it is adapted for puncturing and penetrating the tissues of its victim. The mandibles are very powerful and, relatively to the size of the animal, possessed of enormous leverage. They can work in scissor-like fashion with great rapidity (cutting with the outer edges) and dissect a canal down which the body passes. Once they have penetrated it is impossible for these parasites to retreat. The leptus is provided with a similar arrangement of dorsal spines as that presented by the "itch" parasite. It is just this deep penetration which makes the lesion of the leptus so markedly different from that of the acarus and makes the presence of a diffuse pruriginoid eruption conspicuous by its absence. The leptus autumnalis is, according to most writers, either the six-legged larva of the thrombidium holosericeum or that of the tetranychus. Hanstein, however, denies that it is the larva of the latter. The mature animal will probably have eight legs. As will be seen from the accompanying illustration (which is reproduced from a photograph of the parasite) the legs are jointed

Illustration from photomicrograph, magnified 100 diameters.

and taper to a fine point, from the extremity of which there project three slender bird-like claws. A specimen captured alive showed it, under the microscope, to be a very rapidly moving animal. Anyone who looks into this subject will find that the illustrations and descriptions of the leptus autumnalis given by different writers vary considerably. It therefore appears likely that these observers have been describing different varieties of parasites belonging to the thrombidiæ.

[30] Josué and Salomon at a meeting of the Paris Hospitals Medical Society, July 25th, 1905.

[31] Gandy and Borgnait Legneule at a meeting of the Hospitals Medical Society, Paris, Oct. 27th, 1905.

The skin affection produced by the action of the leptus is far more common during the autumn season than is usually recognised and it is frequently mistaken for other non-parasitic affections. At the outset of the ailment suspicion should always be awakened by the appearance on the legs of irritable papules, especially if they occur immediately above the boots, gaiters, or leggings. If these do not tend to disappear in a short time, and if there is no digestive derangement suggestive of urticaria, such spots occurring in the month of August should always be regarded as suspicious of the leptus autumnalis. Moreover, if several persons are attacked in a similar fashion, in the same season, the diagnosis is almost certain.

The most prominent symptom of the affection is an intolerable itching. Unlike the itching of scabies, which is more or less diffuse, although at the outset limited to certain areas, the itching of this skin affection is strictly local and punctate. After a residence of from three to five days in an infected rural district an invasion of the leptus proclaims itself by a stinging itch at one or more spots, usually about the ankles. Does this lapse of time suggest that the animalcules may require to be hatched from eggs deposited on the skin? The intense itching is almost always, at its outset, accompanied by a pricking or biting sensation, so that one expects on close inspection to see some insect in the act of biting. Usually, however, the closest inspection, carried out as quickly as possible, fails to detect any organism at the site of irritation. When such examination reveals nothing the parasite has been able to walk down the hair follicle without cutting and to disappear from sight, and it is only when the cutting becomes necessary that pricking and itching begin. But at other times, when the point of irritation can be exposed without a moment's loss of time and the animalcule has attacked a portion of the skin which is not patent to its entrance, a tiny red tick, barely macroscopic, can be detected on careful scrutiny. The discovery of the parasite is greatly facilitated by the use of a hand lens. In the great majority of cases the parasite marches with astonishing rapidity down the hair shaft and disappears entirely from sight. Once the animal has located itself in the tissues the itching recommences and becomes well-nigh intolerable. At the point of penetration a wheal rapidly forms. The greater number of the papules are apt to make their appearance in the morning rather than at another period of the day, another point suggestive of the parasites being hatched from their eggs during the night by the warmth of the bed. The period of activity of each infection varies greatly in different individuals as regards the amount of local irritation and the severity of the lesions. When the spots are numerous there may be in certain subjects a slight degree of fever and constitutional disturbance. Normally each wheal runs its course to quiescence in about a week. Shortly after the entrance of the parasite the resulting papules become very hard and angry and surrounded by a bright areola. When the inflammation is acute there is often some insomnia. If scratching be indulged in, and even sometimes when the papules are left absolutely untouched, erosion of the epidermis results with a more or less copious secretion of a sero-sanguineous nature. This discharge tends naturally to coagulate and form crusts, and the ailment then presents the appearance of an ordinary impetigo. Such a skin lesion occurring in the month of August should be carefully investigated. Its infective origin is often overlooked because it not infrequently happens that it may occur as an isolated case in a family. The autumn bug is certainly a respecter of persons, for it often happens that it may only attack one of two people occupying the same bed. In this respect it differs greatly from the acarus scabiei. What condition of skin or system predisposes to an invasion of the leptus I have been unable to determine. Age apparently plays no part as a factor in the etiology of the disease, but as far as my observations go it seems to be more common in men than in women. The inflammatory reaction associated with the presence of the leptus in the tissues is frequently so severe that a hæmorrhage takes place into, and around, the papules. Long after the inflammation has disappeared a brown stain may remain at the site of the lesion. In those cases, occurring principally in children, where the nails are dirty the papules not infrequently become infected and superficial ulceration results.

The treatment of this affection is more unsatisfactory than that of scabies. This arises principally from the deeper penetration of the parasite. As reinfection is almost of daily occurrence ordinary antiseptic or germicidal applications do not give the same satisfactory results. But preventive treatment is of more importance and should aim at those measures that will reduce the likelihood of invasion or re-invasion. With this in view the lower parts of the legs—from the ankles to the knees—should be thoroughly protected. I have noticed that people who wore knickers and children who wore sandals without stockings were more liable to contract the parasite than others. A bandage of very fine linen may be employed, along with inunction of creasote or eucalyptus ointment, and any parasites (or their eggs?) may be destroyed by means of creolin baths taken at bedtime. Such a bath may be prepared by dissolving about a couple of ounces of the fluid in an ordinary lavatory bath filled half full of hot water. The bed-clothing ought always to be attended to in the same way as it is in the treatment of scabies.

The excessive itching of the individual papules may be relieved by rubbing into each one of them a small quantity of some antiseptic and antipruritic ointment, such as the following: Unguentum acidi carbolici, two drachms; unguentum picis liquidæ, half a drachm; and unguentum hydrargyri subchloridi, one drachm. The application of strong ammonia also greatly diminishes the itching of the papules. Still another method of dealing with the papules, which frequently causes a speedy subsidence of the itching and a rapid reduction in their size, is to press them forcibly till all the available serum has been squeezed out of them through the entrance wound. After such pressure the itching is temporarily increased but the papule more rapidly shrivels and the itching does not continue so long. As this procedure causes a considerable amount of pain it is a plan that cannot be employed in the case of children. In those who suffer from any febrile symptoms or who are kept from sleeping by the irritation, the administration of ten grains of phenazone combined with 30 grains of potassium bromide at bedtime affords considerable relief.

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Glasgow.

THE TREATMENT OF TUBERCULOSIS OF THE URINARY SYSTEM BY TUBERCULIN (T.R.).[1]

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THE treatment of tuberculosis by tuberculin and antituberculous serum has in the past been so discouraging that at present such methods are much at a discount. The calamitous results which in many instances attended the employment of Koch's old tuberculin in the early "nineties" led to an almost complete abandonment of all kinds of tuberculin and it is but recently that interest has again begun to revive, owing largely to the work of Koch himself and, amongst others, that of Arloing, Marmorek, and in this country Wright and Douglas. My own attention has been called more particularly to this subject during the past seven or eight years by two observations: firstly, that tuberculosis of the urinary system and, more particularly, primary tuberculosis of the bladder, is of far more frequent occurrence than is generally recognised; and, in the second place, the disappointing results of operative treatment of these conditions, including the use of bladder washes and instillations of all sorts.

It may be said that a surgeon dealing especially with diseases of the urinary system will naturally meet with more cases of urinary tuberculosis than one working in a wider

[1] A paper read before the Roya Medical and Chirurgical Society on Dec. 12th, 1905.

sphere, but the frequency with which cases of vesical tuberculosis, more especially in an early stage, have drifted, as cases of "obstinate cystitis," into the later stages before a definite diagnosis has been made, lends some support to my first observation. The extreme importance of early diagnosis will appear later. The treatment of tuberculosis of the urinary tract, particularly the bladder, by operative measures is so disappointing in my experience that I have almost ceased to employ them, whilst tuberculosis of the kidneys is usually so far advanced and so often accompanied by infection of other parts of the urinary tract when operations are resorted to, that permanent benefit seldom seems to result. Although the question of tuberculosis of the kidneys and ureters must necessarily be mentioned in the course of these remarks, I wish more particularly to refer to primary tubercle of the bladder or to those cases in which the condition of the bladder is the most important feature of the disease, and is, so far as can be judged, the primary infection in the urinary system.

TREATMENT BY OPERATION AND BY ANTISEPTIC WASHES.

Operative treatment of vesical tuberculosis aims at the destruction of the foci of infection, either by a complete excision of the tuberculous area, or, when the infection is more diffuse, by scraping the infected regions and rubbing in such remedies as iodoform. In the early stages of invasion of the bladder by tubercle the deposits may be in either the superficial or deeper layers of the mucous membrane or even in the submucous tissues. There is no ulceration and accurate evidence of the extent of the disease can only be obtained by a careful cystoscopic examination. When the disease has progressed a little further, ulceration occurs, but not synchronously in every patch when the disease is diffuse. On examining such cases with the cystoscope the process may be seen in every stage, necrotic ulcers co-existing with patches of inflamed and swollen mucous membrane, whilst it is reasonable to suppose that there are still more immature deposits which do not show at all. The solitary tuberculous ulcer is, in my experience, exceedingly rare, unfortunately for the patients, for these are the only cases in which complete excision can be attempted. The nearest approach to this condition which I have seen was in case No. 2, where the ulcer appeared at first to be solitary, but more careful examination showed several minute unbroken deposits around it. Such being the characteristic distribution of tubercle in the bladder, it is obvious that such operations as excision and scraping must be limited to the narrow field presented by the true tuberculous ulcer. Even in these cases Hurry Fenwick recommends[2] the use of tuberculin to begin with, excision to be resorted to if the ulcer is seen with the cystoscope not to be healing. It is a very difficult thing to find small areas of disease in the mucous membrane of a bladder which has collapsed after being opened suprapubically and the most one can hope for in a case of diffuse tuberculous cystitis is to be able to recognise the more obviously ulcerated patches, while the non-ulcerated deposits will almost certainly escape recognition. Watson Cheyne[3] records five cases treated by simple suprapubic drainage without any attempt at scraping or excision and this course certainly seems to me wiser than indiscriminate attempts at either. The benefit which he observed from this practice he attributes to the rest given to the bladder and relief from painful and frequent micturition. Perineal drainage has been advised for the same purpose but should never be done. The drainage track almost invariably becomes infected and remains open as a fistula, with unhealthy, granulating walls, and the drainage-tube often cannot be tolerated by the exceedingly sensitive bladder.

Injections of all kinds into the bladder are, in my opinion, injurious, for, as a rule, the symptoms are aggravated by them, and more harm than good is done. How can emulsions of iodoform and solutions of copper, mercury, or any other drug affect any but the ulcerated surfaces? The non-ulcerated deposits must be uninfluenced, and, owing to the great frequency of micturition usually present, the drugs are washed away within a very short time of their introduction. The less a tuberculous bladder is subjected to instrumentation the better for it, and when the use of an instrument is necessary—i.e., the cystoscope—the greatest pains should be taken to avoid the introduction of sepsis, for sepsis is to the tuberculous bladder as fire to tow. A consideration of the foregoing facts led me to try tuberculin injection, though without any very sanguine hope of much success.

[2] Ulceration of the Bladder, Simple, Tuberculous, and Malignant, E. Hurry Fenwick, 1900.
[3] On the Treatment of Tuberculous Diseases in their Surgical Aspects, Watson Cheyne, 1900.

NATURE OF THE REMEDY EMPLOYED AND OF ITS ACTION.

A considerable number of tuberculins and antituberculous sera have been employed since Koch published the details[4] of the preparation of his first tuberculin. Stated briefly, the various modifications introduced by Koch himself are as follows. The first tuberculin (T.) was obtained by growing the bacilli for about two months on alkaline broth media, to which was added a small quantity of peptone and glycerine; the fluid thus obtained was passed through a porcelain filter, the bacilli being thus eliminated, and was evaporated to one-tenth of its bulk, leaving a thick yellowish fluid, to which Koch gave the name of tuberculin (T.). The next tuberculin was prepared upon an entirely different principle. Dried cultures of bacilli were powdered in a mortar; the powder was mixed with distilled water and the mixture was centrifugalised; the clear fluid thus obtained was called tuberculin oberstand (T.O.). The solid centrifugalate having been dried was mixed with distilled water and again centrifugalised; this process having been repeated several times the fluids obtained from each repetition were mixed together and 20 per cent. of glycerine added to the bulk; this Koch called tuberculin rückstand (T.R.), and this is the tuberculin which I have used in the series of cases here described. Wright and Douglas,[5] however, cast doubts upon the sterility of this tuberculin, and having satisfied themselves by a series of observations that T.R. can be heated to 60° C. without injuriously affecting the activity of the solution, they subject the tuberculin to this heat and also add to it 0·25 per cent. of lysol. The T.R. which I have used recently has been subjected to this heat for one hour but I have not used the lysol. The importance of these extra precautions is also borne out by the fact that live bacilli have been found by Thellung in the new tuberculin,[6] and produced tuberculosis in rabbits and guinea-pigs.

EFFECTS OF INJECTION OF T.R.

1. *At the site of injection.*—In the greater number of my cases very little local effect has been noted, a little swelling and hardness of a small space around the puncture persisting for from 24 to 48 hours in a few instances but the majority of cases showed no reaction. In two cases, however, great reaction was noticed, the signs in each being identical. At the point of inoculation a considerable swelling formed, in one case of the size of half a Tangerine orange; the whole arm swelled to the finger-tips; it was distinctly œdematous and the axillary glands were slightly hard and tender. The swelling subsided in 48 hours, leaving a circular red and tender spot about a half inch in diameter at the point of puncture; this swelling had the appearance of being about to slough but gradually subsided, leaving a depression resembling a small-pox mark. The injection which caused this result was half a milligramme and the same phenomena were seen on two subsequent occasions with the same dose only to a much less degree; the dose was therefore reduced to one-quarter milligramme and no further local trouble occurred. In the other case the symptoms were similar but not so severe and no scarring remained at the needle puncture when the general swelling had subsided; in this case the symptoms followed injections of one milligramme and on decreasing the dose to a half milligramme no further trouble was experienced. Both these cases occurred whilst I was using T.R. which had not been subjected to sterilisation by heat and it is worthy of note that they only occurred with comparatively large doses of the remedy. I much regret that no bacteriological examination was made of the batch of T.R. from which these injections were taken.

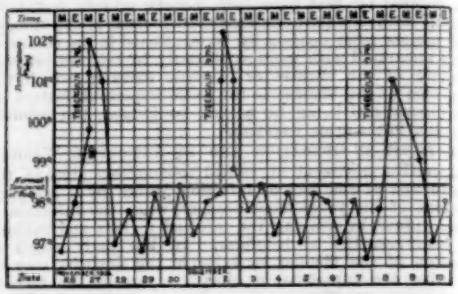
2. *Effect upon the tuberculous deposits.*—The effects of the old tuberculin (T.) upon tuberculous deposits is well known from both clinical and experimental evidence in the human subject; it was most easily seen in cases of lupus and by post-mortem examination of tuberculous rabbits and guinea-pigs after inoculations of tuberculin; in lupus a vigorous reaction is observed, the patches becoming swollen, red, and hot, these signs being followed by a necrosis and sloughing

[4] Deutsche Medicinische Wochenschrift, 1890.
[5] Proceedings of the Royal Society, vol. lxxiv., No. 499.
[6] Deutsche Medicinische Wochenschrift, 1901, No. 48. Centralblatt für Bakteriologie, 1902, No. 1. Quoted by Bosanquet, Serums, Vaccines, and Toxins, 1904, p. 245.

of the diseased area, after which healing commences in those cases which do well. In animals which have been killed by the injection of a large dose of tuberculin (T.) the greyish-yellow nodules of tubercle are seen to be surrounded by a zone of hyperæmia varying in intensity according to the rapidity of death; these results are said not to follow the employment of the new tuberculin (T.R.) but this is certainly not the case in my experience of tuberculosis of the urinary bladder. In some of my cases very little change was noticed in the infected organs with the smaller doses of T.R., but when larger doses were employed increase of pain on micturition, increased frequency of micturition, and an increase of hæmaturia and pyuria appeared with general malaise, loss of weight, and sometimes sharp rises of temperature. These signs, I consider, showed that too large or too frequent injections of tuberculin were being used and the doses were diminished in size and frequency; I think there can be no doubt that these phenomena were dependent upon active changes in the tuberculous patches induced by the action of tuberculin; confirmatory evidence upon this point was gained by a cystoscopy undertaken during one of these exacerbations, where the discrete tubercles previously observed were seen to be surrounded by a wider-spread zone of hyperæmia and congestion, the bladder capacity at the same time being reduced to about one half; this phase passed away on diminution of the dose and lengthening of the intervals between the injections.

Effect upon the system generally of T.R.—Tuberculin (T.) was supposed to act, not by killing the tubercle bacilli, but by causing necrosis of the small cell infiltration induced by the bacilli, thus producing shedding of the bacilli from the infected areas. The action of T.R. is stated to be very different. Wright and Douglas[7] consider that the nature of a tubercle vaccine consists in the presence of a "derivative of the protoplasm of the tubercle bacillus which is capable of producing an elaboration of tuberculotropic substances in the organism."

The now well-known researches of these authors have led them to formulate the theory that injections of T.R. in the human subject produce in the blood bodies to which they have applied the term "opsonins" or elements in the blood fluids which modify the bacilli in such a way as to render them an easy prey to phagocytes. This opsonic reaction or resistance is of a higher degree in healthy persons than in those infected with tubercle and the opsonic power of the blood can be stated in the form of curves, which rise or fall with the increase or decrease of its protective and phagocytic power. Moreover, Wright and Douglas suggest, by a series of results, that the cumulative increase of the protective elements which is desired can be obtained only by the proper regulation and interspacing of the successive doses of vaccine, and not only is it necessary to ascertain by the rise of the curve to its maximum that the highest point of protection is obtained but that by too frequent or too large doses the opsonic reaction is diminished as is shown by the fall of the curve. If it can be confirmed that only by a study of these curves the doses of tuberculin can be accurately measured it is a most important consideration for those who, like myself, have relied on clinical evidence for this purpose, for, unfortunately, the estimation of opsonic curves is not only a matter for a skilled bacteriologist but is a proceeding which consumes an immense amount of time. For these reasons it is, so far as I can see at present, quite unsuited to the exigencies of daily practice. It therefore remains to be asked, Can the doses be regulated sufficiently well by clinical signs to insure a good result? I think the answer to this question is that it is usually obvious from the patient's condition and symptoms when the maximum dose to be used with advantage has been reached, for I have already indicated some of the symptoms which show themselves in cases of tuberculous cystitis. That I have over-dosed my patients on some occasions I feel certain, but by following the method of a gradual increase until that dose is arrived at which causes some reaction and malaise and then diminishing it to a dose which falls short of these effects a fairly good result is usually obtained. I began tuberculin injections a considerable time before Wright and Douglas's work was published and therefore knew nothing about opsonic curves, the only laboratory method of checking results which was at my disposal being the method of estimating the agglutinating properties of the blood serum upon tubercle bacilli, which was not then, and is not now, considered to be in any way a trustworthy test. I therefore based the size and interspacing of the doses upon the clinical evidence already indicated, and this must be borne in mind in considering the results in the cases mentioned. A comparison of the results in this series of cases and a series treated by opsonically graduated doses would, I think, be of great interest. The symptoms of over-dose which I have noted have always been of short duration and invariably



accompanied a fairly large dose of the vaccine; I have never seen these effects produced by less than $\frac{1}{10}\frac{1}{0}$th milligramme. This temperature chart shows the effects of inoculations of T.R. of too great a size.[8]

THE DIAGNOSIS OF SUITABLE AND UNSUITABLE CASES FOR TREATMENT.

It is important to recognise that all cases of urinary tuberculosis are not suitable for treatment by T.R.; this depends upon the fact, which I have already stated, that local reaction does undoubtedly occur. I believe that Hurry Fenwick was the first to call attention to the danger of using T.R. where both ureters are affected or where there is strong presumptive evidence that this is the case; this evidence can only be obtained by a careful cystoscopic examination conducted with the utmost gentleness and with a scrupulous regard for asepsis; it should therefore be a rule never to commence the use of T.R. until after a careful cystoscopy. A glance at this specimen will reveal the necessity for this precaution: the bladder is not very markedly infected, but both ureters are studded with tubercle and any acute swelling of the infected area in this case would have caused total blocking of the ureters and resulted in suppression of urine. This occurred in a case where I deprecated the use of T.R., but this advice was disregarded, with the result that after five injections of from $\frac{1}{1}\frac{1}{0}$th to $\frac{1}{10}$th milligramme total suppression took place and the patient died in three days from the onset.

The evidence afforded by the cystoscope refers to the appearance of the ureteric orifices and the character of the urinary efflux from them. If both orifices are swollen, inflamed, and in some cases surrounded by ulceration, the probability is that the ureters are also infected, whilst it is often possible to observe a flaky or even distinctly purulent efflux from one or both sides before changes have taken place in the orifices. T.R. should never be given unless there are a clear orifice and a clear discharge on one side at all events. That this cystoscopic evidence is open to fallacy I am well aware; for instance, a ureter badly infected with miliary tubercle may conceivably discharge a nearly clear urine. Such a case I had the opportunity of seeing recently where the cystoscope showed a clear stream issuing from a ureter which subsequent operation proved to be studded with minute tubercles with primary disease in the corresponding kidney, the orifice in this instance being neither swollen nor ulcerated. On the other hand, tuberculosis of the bladder may cause swelling and ulceration of the mucous membrane around the ureteric orifices although the ureteric mucous membrane is not as yet affected. But such cases are rare and certainly do not outweigh the valuable evidence to be obtained in the majority of instances from a cystoscopic examination. In cases where

[7] Proceedings of the Royal Society, vol. lxxiv., No. 499.

[8] I must emphasise the fact that I am here speaking of tuberculosis of the urinary system only, the symptoms of which I consider a very delicate test for regulation of doses. In such conditions as tuberculous adenitis opsonin indices may be absolutely essential.

the cystoscope shows a bladder free from, or but slightly infected with, tubercle with strong evidence of a unilateral infection of one kidney and ureter—i.e., a clear and normal efflux from one side with a purulent efflux and an infected orifice on the other side—nephrectomy and ureterectomy followed by the use of T.R. are indicated.

Method of employment.—The T.R. is given hypodermically with a sterilised syringe. Wherever possible I keep the patient in bed or, at all events, in the house for the initial stages of the treatment, the temperature and general symptoms being carefully noted. I now commence with a dose of $\frac{1}{10}$th milligramme, and give increasing doses every other day until a definite reaction is obtained, usually marked by a rise of temperature of two degrees or so, some malaise, and a slight increase of pain and frequency of micturition. The dose is then reduced to that quantity which apparently causes no reaction and is given steadily once a week for long periods; should a definite reaction again occur the dose is once more diminished and given at longer intervals. My experience of T.R. in the treatment of tuberculosis is limited to the urinary system, and here I consider the clinical evidence is a sufficiently delicate indication. Over-dosing causes such definite symptoms of loss of ground, evidenced by increased pain, hæmaturia, and frequency of micturition, with a heightened temperature and loss of body weight, that they cannot be overlooked; they correspond with Wright's negative phase of the opsonic curve, and I feel content that, by a careful watch upon these symptoms, the dosage can be sufficiently accurately regulated. During the progress of treatment the patient's weight and temperature should be carefully noted, together with the subsidence or progress of the symptoms particularly applicable to the organs affected, and it is perhaps hardly necessary to add that all hygienic and dietetic treatment found beneficial in tuberculosis generally should be followed. In those cases which show favourable progress the number of tubercle bacilli found in the urine steadily decreases. A cystoscopic examination from time to time conducted with the precautions to which I have alluded will show the extent of healing which has taken place.

RESULTS.

I have included in this paper no cases which have not been under observation for more than one year, but even so I feel that it is impossible to speak with any certainty as to the results obtained in those few cases which have apparently regained perfect health. Tuberculosis of the urinary system has such long periods of latency that he would be bold indeed who prophesied a permanent cure in patients apparently well for a year or more. This is evidenced by a case of this series in which the patient has suffered from tuberculosis of the bladder for at least 17 years, during which time he has had periods of a year and more with almost entire absence of symptoms; but the renewed interest taken in tuberculin renders any record of results, whether good or bad, of sufficient importance to warrant their publication.

[Mr. Pardoe appended to his paper a tabular statement giving full details of all the cases. The statement was too long for reproduction in our columns, but the subsequent paragraphs summarise its contents:—]

In all 21 cases I have been able to obtain information up to within a few weeks, with one exception. I have not included a considerable number of patients who have disappeared during the course of their treatment and whose movements I have been unable to trace, although many of them were in a very encouraging condition when lost sight of.

Of these 21 cases five appear to be cured. Bearing in mind, however, the great tendency to relapse shown by tuberculosis of the urinary system I prefer to call them only apparent cures. Four cases show a very marked improvement, evidenced by absence of pain, diminution of the frequency of micturition, absence of hæmaturia, and cystoscopic evidence of the amount of such improvement. Six cases show no improvement. In some of these I consider that T.R. has not had a fair trial, particularly in Case No. 14. This woman was subject to outbreaks of drinking, lasting sometimes for two or three weeks, during which she would consume from one to three bottles of whisky a day. The injections had to be stopped during these drinking bouts and for some time after. In one or two other cases also the injections were not continued regularly, owing to the patients feeling so much better that they stopped away, only returning when their symptoms began to reappear. Six cases died. In one of these I have no doubt T.R. was the direct cause of death. T.R. should not have been given in this case at all and it was only at the patient's urgent request that I gave him five injections. He had a very severe reaction with $\frac{1}{10}$th milligramme, and as I was certain that both ureters were infected I refused to give more. He insisted on having further injections on returning home to the country and died very rapidly with complete suppression of urine. In all the fatal cases the infection was somewhat extensive. I append here in tabulated form the results I have obtained up to date:—

Died.	*No improvement.*	*Much improved.*	*Apparently cured.*
Case	Case	Case	Case
No. 1	No. 9	No. 3	No. 2
7	13	6	4
11	14	8	5
15	16	12	10
20	17	—	18
21	19	—	—

CONCLUSIONS.

My experience with other methods of treatment has been disappointing in the extreme, for I cannot call to mind any case of apparent cure of vesical tuberculosis by operative measures and the published records of such cases are indeed few. I therefore think that, so far as these series of cases go, it is not unduly optimistic to claim that the results gained by injections of T.R. are at least as good as those by any other method. It will be noted that the earlier the case is brought under treatment, or, to put it in another way, the more circumscribed is the infection, the better are the results. In not one case where the cystoscope showed diffuse infection has very much benefit been noted. The cases of apparent cure occurred where only a small amount of bladder surface appeared to be involved. I do not think that in T.R. we have a perfect remedy for tuberculosis of the urinary system but for vesical tuberculosis it seems to me the best remedy at our disposal. Before I used it I felt little or no hope of effecting much improvement but I now feel that in some cases there is hope of a cure and in a larger proportion of cases of, at all events, great improvement. I shall venture to ask permission of the Fellows of this society to bring before them the later histories of these cases, together with those of patients whose treatment has been too recently commenced to be mentioned to-day, unless the onward march of science in the meantime brings to us most happily a more perfect and hopeful method.

Wimpole-street, W.

ÆSCULIN IN CONJUNCTION WITH FINSEN LIGHT IN THE TREATMENT OF LUPUS VULGARIS.[1]

BY GEORGE H. GRAHAM, M.D. DURH.,

MEDICAL OFFICER IN CHARGE OF THE ELECTRICAL DEPARTMENT, EAST LONDON HOSPITAL FOR CHILDREN, SHADWELL, E.

EXPERIMENTS in sensitising animal tissues to the action of light have been carried out by Georges Dreyer in Copenhagen, who read a paper on the subject before the Royal Danish Academy, and also by W. J. Morton of New York. Dreyer used a 30-ampère arc lamp concentrating the light through a train of quartz lenses similar to those in use in Finsen's apparatus and as the sensitising agent a 1 in 4000 solution of erythrosin. Very considerable differences were shown in sensitiveness between sensitised and non-sensitised cultures and I would refer to his paper for the interesting table of his results. Among other points he has shown that cultures of bacillus prodigiosus sensitised with erythrosin are sterilised in the yellow green rays of a spectrum cast by a quartz prism. Morton states that he has used quinine bisulphate and æsculin excited by radium and by x rays; of the two he preferred excitation by radium. I was at first deterred from using erythrosin by the fear that a permanent stain might remain after its injection and later

[1] A paper read at the meeting of the British Electro-Therapeutic Society held at Leicester on July 27th, 1905.

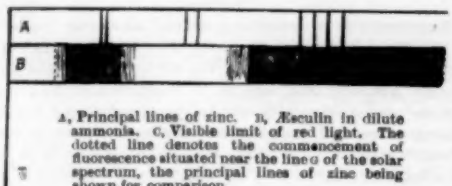
by the information given me by Dr. Reyn of Copenhagen that when injected in a strength of 1 in 4000 severe reactions followed its use with Finsen light, causing much pain and often sloughing of the tissues.

Some here present may recollect a slide shown by Dr. H. E. Gamlen when he read a paper before this society last November of a patient who, following an injection of erythrosin in the neck and an application of Finsen light, had a deep ulcer develop which had resisted all methods of healing during several months and even then remained unhealed. I shall again refer to this action of erythrosin in discussing that of æsculin. I have used æsculin excited to fluorescence by a 20-ampère arc light passing through the Finsen-Reyn apparatus. Æsculin ($C_{15}H_{16}O_9$), discovered by Minor in 1830, is a glucoside obtained from the inner bark of Æsculus hippocastanum (horse-chestnut), especially in March, before the buds open. It is bitter, very sparingly soluble in cold water but easily in boiling water, coagulating quickly again on cooling. If the solution is made slightly alkaline by the addition of 2 or 3 per cent. of sodium carbonate the coagulation is prevented. In two or three days after a solution is made it turns dark in colour and it should therefore be used freshly made. Heat at 230° C. resolves it into glucosan and æsculitin. Sonnenschein gives as a delicate test for it that if it is agitated with a small quantity of nitric acid it yields a yellow solution which assumes a deep blood red colour on addition of ammonia.

Æsculin is one of the highest fluorescent bodies in existence to our knowledge and I believe passes through the system unchanged. Calvi attributed convulsive effects to it in doses of two milligrammes, but Amore afterwards considered this due to the glycerine used to dissolve it. Morton has given it in one-grain doses without ill-effects. I gave myself a hypodermic injection of five minims of a 5 per cent. solution rendered alkaline by the addition of 3 per cent. of sodium carbonate. No pain was caused nor did any constitutional disturbance follow. Fifteen minutes after the injection the urine showed slight evidence of fluorescence. Another specimen passed an hour after the injection was very distinctly fluorescent and this increased markedly during four days that I kept it, leaving a fluorescent deposit on the side of the test-tube. It was evident that as alkaline changes took place in the urine it became more fluorescent.

Doubt was expressed by a member of this society at a recent meeting as to whether fluorescein and like bodies did actually fluoresce in animal tissues and with this object I had injected under the shaved skin of a guinea-pig five minims of a 5 per cent. solution of æsculin. Having removed nearly three square inches of skin together with the subcutaneous tissue and some muscle and stretched it over a ring I passed the 20-ampère carbon arc light through the Finsen Reyn apparatus on to it exactly as if a patient was being treated and found the whole of the skin (one millimetre thick) and subcutaneous tissue very fluorescent. Where the muscle remained attached the fluorescence was not so evident, the tissues there being at least three millimetres thick.

With regard to the absorption spectrum of æsculin, G. G. Stokes in vol. clii. of the Philosophical Transactions, 1862, gives a diagram showing a band between G and h H of the solar spectrum.



A, Principal lines of zinc. B, Æsculin in dilute ammonia. C, Visible limit of red light. The dotted line denotes the commencement of fluorescence situated near the line G of the solar spectrum, the principal lines of zinc being shown for comparison.

C. G. Schmidt[2] gives a band from wave lengths 410 to 257, the maximum of intensity being at wave length 361; from wave length 257 the absorption increases in intensity in the extreme ultra violet. Nicholls and Merritt[3] give the position of the absorption band as from wave length 480 to 340 but state that they put twigs of horse-chestnuts into water and did not attempt to isolate the glucoside itself.

[2] Annalen der Physik und Chemie, No. 5, 1898.
[3] The Physical Review, New York, vol. xix., 1904.

Being such a fluorescent body only a small dose is necessary, and in practice I have used from one to five minims of a 5 per cent. solution hypodermically. The solution is better used within two days of being made. The needle is passed only just through the skin—not deeply into the tissues—and the injection is made immediately under the spot to be treated. The reaction following an ordinary Finsen sitting is usually over by the third day, but after sensitising with æsculin I have observed it to last from four to seven days longer. It has also seemed to me that æsculin remains in the tissues for some days, as I have noticed that Finsen sittings have had stronger reactions than normal when given in the neighbourhood of an injection even from four to five days afterward.

In lupus vulgaris cases I have now given considerably over 100 injections, no ill effects following in any instance; and I think the chief value of æsculin in this disease will be found in the treatment of obstinate isolated tuberculous nodules that sometimes remain after a preliminary course of ordinary Finsen treatment has cleared up the disease in the surrounding structures. Such nodules I have seen rapidly disappear after being sensitised, though several previous applications of the light had been made. I have also found æsculin given in this way to be of material assistance in softening thickened fibrous scars in character similar to keloid that so frequently follow the scraping of lupus patches and which form such excellent harbouring ground for tuberculous nodules from which they are very difficult to eradicate.

Now, how can the action of æsculin be explained? It seems to me to be a purely physical one. The term fluorescence proposed by Stokes is applied to the conversion of the invisible ultra-violet rays into visible ones; that is, their refrangibility is lowered, their wave length being increased. Certain substances, both fluid and solid, emit a glowing light in virtue of their absorption of ultra-violet rays, among the most powerful of these, as stated above, being æsculin. In the original Finsen or Finsen-Reyn apparatus a concentrated light combining various rays is used, the principal rays having a therapeutic value being the blue, violet, and ultra-violet. But it is known that the ultra-violet rays, though having the strongest therapeutic and bactericidal action, have very slight power of penetration into animal tissues; consequently the remarkable results that have been admittedly achieved in the treatment of lupus by Finsen's method are probably due chiefly to the blue and violet rays. Now I would suggest that æsculin, a powerful absorbent of ultra-violet rays, gives them off again in the wave lengths corresponding to the violet and blue, and by causing a great local excess of concentration of these rays at the time the light is applied and by its prolonged fluorescence in the tissues afterwards clears up the tuberculous nodules more rapidly than the arc light alone. Whether this clearing takes place by the direct bactericidal action of the rays or by phagocytosis is a question which I shall not enter into here, but probably each has its sphere and the ultimate result may be due to a combination of the two.

The effect of this concentration and prolonged action is shown by the yellow-green rays in Dreyer's experiment with erythrosin, but an interesting point arises in connexion with the practical use of this substance and one that I should like to hear explained—viz., the destruction of tissue that I have mentioned frequently takes place when erythrosin is made to fluoresce in it. The longer wave lengths of the yellow-green portion of the spectrum are supposed to have little therapeutic effect, whereas those of the short blue-violet are acknowledged to have a strong action, yet æsculin, which gives off the latter, I have shown to be free from ill-effects, while erythrosin giving off the yellow-green proves painful and destructive.

Old Cavendish-street, W.

HUSBAND'S LIABILITY FOR WIFE'S MEDICAL TREATMENT.—In the City of London court on Dec. 7th, Mr. G. J. Cooper of Bermondsey sued the husband of a late patient for £2 7*s.* 6*d.*, being the fees due after attending the wife on 19 occasions. The defendant pleaded that he did not employ Mr. Cooper, who was called in by the patient's mother at the latter's house from which she was removed at last to a lunatic asylum. Judge Rentoul, K.C., told the husband that the law was that if a wife was staying away from home and she was taken ill any medical man called in by her host could compel the husband to pay the bill; therefore he gave judgment for the plaintiff with costs.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

A CASE OF SEPTIC PARAPHIMOSIS.

BY HERBERT ARTHUR SMITH, M.D. DURH.

THE following case deserves to be recorded, as strangulation of the glans penis by a reflected and irreducible prepuce drawn tightly over it and following on coitus is uncommon.

The patient, an artisan, aged 25 years, came to me on Oct. 23rd, 1905, and stated that he had been married two days before, that he had always been chaste, that he had never had any local disease, but that from a child he had never reflected his foreskin or known the need of washing the penis, and that he failed in the act of coitus, being suddenly seized with severe pain, swelling, and difficulty in micturition. I found a reflected and involuted collar of preputial tissue, shining and tense with œdema, and turgescent and blue from strangulation. The glans was angry, red, and inflamed, there was a septic balanitis, the mucosa of the prepuce was involved, the coronal sulcus was the seat of chalky concretions, and this state was entirely due to a neglected phimosis and the ensuing absorption of germ-laden and retained smegma. The foreskin having been forced backwards over the glans the latter was strangulated by a tense band of tissue and the frænum being well on the stretch gave the organ an arched appearance. As reduction was impossible and as the parts were in obvious danger of sloughing I decided, after the manner of Verneuil, to liberate the frænum for one-third of its apical length by dissecting it up and giving it a posterior attachment, and to relieve the strangulation at the neck I incised the band of constriction to the left of the mid-line of the dorsum; immediate local and systemic relief followed but I did not perform reduction. Warm antiseptic irrigation and lead lotion were useful but the parts were so riddled with inflammatory products which the intense œdema of 48 hours had occasioned that to relieve the condition I had then and for many days to resort to acupuncture to keep the ecchymosed state under. A little later oleate of mercury dressings and an indiarubber bandage removed the residual swelling. The man kept at work all the time with the organ suspended. The marital relations were successful on Nov. 21st and the foreskin remains reducible and yet comfortably reflected.

The treatment is, I believe, somewhat heterodox, but I wished to avoid a possible phimosis and preferred the asepsis of an uncovered glans with a collar of prepuce released and adapted to new conditions, circumcision being undesirable.

Bromley, Kent.

A NOTE ON A CASE OF COMPLETE INVERSION OF THE UTERUS.

BY P. L. TOWNLEY, B.A., M.B., CH.M. SYD.

ON returning from seeing the following case I picked up THE LANCET of August 26th and read therein a note by Mr. H. H. Robinson on three unusual cases of midwifery in one week. As my case was similar to his first I venture to record it for the same reason as Mr. Robinson has given—viz., its rarity.

On Sunday, Oct. 8th, I received a summons to see a patient who had been delivered at 2 P.M. the previous Friday. All the information contained in the message was that the case was urgent. As the messenger had ridden 35 miles and I had to go the same distance I did not see the patient till 7 P.M.—that is, 53 hours after delivery. The history was that the child was born on Friday at 2 P.M. and that the officiating midwife (who was the usual bush "rabbit ketcher") had made traction on the cord to remove the placenta which came away. Immediately after the expulsion (or "avulsion") of the placenta the patient complained of violent and continuous uterine contractions which after 33 hours resulted in the extrusion of something from the vagina, after which the patient felt quite comfortable. These expulsive efforts had been accompanied by much hæmorrhage. The midwife told the patient that the mass which was hanging from the vagina was something which, in her opinion, "ought to come away" and proceeded to haul on it, but the patient, "feeling as if her inside was being dragged out," made her desist and sent for me. This occurred at 11 P.M. on Saturday. The patient, who had had three children previously, was very anæmic but not suffering from shock. To quote Mr. Robinson's words, "There was a huge mass outside the vulva lying on the bed, which proved to be the uterus completely inverted and extruded as far as the vaginal vault." Indeed, the vagina also seemed to be half inverted. There was no portion of the placenta or membranes adherent.

Under chloroform and after an hour's hard work I succeeded in placing the uterus "inside-in" again. I douched the uterus, which contracted well, with a large quantity of hot carbolic lotion and packed it with sal-alembroth gauze, which I removed the next day. I was only able to see the patient three times afterwards and on each occasion I washed out of the uterus much pus. The temperature ranged from 101° to 103° F. for a week but the patient maintained a clean tongue and a good appetite all through. When I saw her last the temperature was normal and she was sitting up, not seeming any the worse for her experience. One shudders to think of the result if she had had sufficient fortitude and faith to allow her attendant to complete the attempted avulsion of the uterus.

Gayndah, Queensland.

Medical Societies.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

The Treatment of Tuberculosis of the Urinary System by Tuberculin T.R.

A MEETING of this society was held on Dec. 12th, Sir RICHARD DOUGLAS POWELL, Bart., the President, being in the chair, when the discussion upon opsonic reaction was continued.

Mr. JOHN G. PARDOE read a paper on the Treatment of Tuberculosis of the Urinary System by Tuberculin T.R., which is published in this issue of THE LANCET.

The PRESIDENT, after referring to the immense practical value of the communications which had been made at this and the former meeting, said that the mechanism of immunity to various forms of bacterial infection had never been so clearly enunciated. It was clear that there were several opsonins side by side in the blood which were prepared to deal with various forms of infection. He did not know whether these various opsonins could be separated out from one another. He compared the positive and negative phase as produced by active tuberculous ulceration with the similar phases produced by injections of serum, and referred to the effect of exercise as determining the too active circulation through the focus of disease and thus producing an undesirable negative phase. In his somewhat limited experience he thought that fairly localised and quiescent cases should only be treated by injection and the more active cases only after being treated on sanatorium lines to bring them into such a quiescent condition. In many of the cases discharged from sanatoriums apparently well it had been shown that the opsonic reaction was abnormally low. He thought that the opsonic index would indicate the amount of exercise a patient should take, for if high the "flushing" of the lesion would do good, whereas if low harm would probably result. He looked forward to the time when a clinical index would be found, for it was impossible to carry out opsonic observations except in a limited number of individuals who needed treatment.

Dr. G. W. ROSS said that he had estimated the content of the blood in antibacterial substances in 100 cases taken indiscriminately from the wards of the Victoria Park Hospital. Of these, 51 per cent. showed on the initial examination an opsonic index above 1·2—i.e., above normal; 38 per cent. showed an opsonic index between 1·2 and

0·8—i.e., within the normal limits; and 11 per cent. showed an opsonic index below 0·8—i.e., below normal. Of these 11 cases four were early, five were advanced, and two were tuberculo-fibrotic. He had further observed the variations in the opsonic indices of 30 patients (mostly advanced) over periods of from several weeks to several months. The blood of each case was examined at intervals of about ten days and in all 155 observations were made. Of these 30 cases 27 showed an opsonic index above normal—i.e., 1·2—during some period of their stay. 25 showed a fluctuation of at least 0·3 in their opsonic indices during some period. Of the remaining five cases three showed a high opsonic index at some period, so that but two cases remained which differed in having neither a high nor a fluctuating opsonic index. Of the 30 cases, 27 on initial examination were within or above the normal limits and in most of these there was observed a definite tendency towards a lower (and low) opsonic index after rest in bed. This downward tendency was, as a rule, arrested and the opsonic index was distinctly elevated with exercise. No concurrence in point of time was found between the fluctuation of the temperature and the fluctuation of the tuberculo-opsonic index. In general, however, the subjects of a continuous pyrexia, medium or high, showed an increased or a high opsonic index. In applying these observations to the diagnosis of pulmonary tuberculosis he had found that a single observation of a tuberculo-opsonic index of 1·3 or higher was highly significant of an acute tuberculous infection. He had never recorded a tuberculo-opsonic index as high as 1·3 in any case that was not definitely the subject of a tuberculous infection. In the absence of a high index on the initial or subsequent examination several observations of the tuberculo-opsonic index showed a fluctuation of four decimal points; he was of opinion that such was distinctly in favour of the presence of a tuberculous infection. The determination of an opsonic index of 0·6 or less upon several occasions, probably meant a tuberculous infection, but the evidence upon this point was as yet insufficient. The non-occurrence of a high or of a fluctuating tuberculo-opsonic index in patients acutely ill was very strong evidence against the infection being tuberculous. He instanced five cases in support of this statement and said that the principle was of the greatest possible assistance in such conditions as bronchiectasis, fibroid phthisis, bronchitis and emphysema, and simple debility. He then dealt with treatment and said that a tuberculo-opsonic index at or below 1 should be the criterion of the suitability of the case for inoculation, for it would seem that in patients whose opsonic index was 1·4 or more nature was doing her utmost. Doses of from $\frac{1}{100}$th to $\frac{1}{10}$th milligramme were given—six inoculations in seven weeks. He then drew attention to several points which he considered of practical importance: first, there was no reaction at the site of inoculation; secondly, only a slight shivering followed the first inoculation in two cases; thirdly, no disturbance of temperature occurred; fourthly, depression was complained of during the negative phase and exhilaration was present during the positive phase; fifthly, the occurence of a "negative phase" was the rule; and sixthly, in all cases the level of opsonic power was definitely raised and by appropriate inoculation a much higher level was maintained than existed before inoculation. In conclusion, he said that concerning pulmonary tuberculosis he believed that this treatment would give most encouraging results if due care and persistence were exercised in the application of Dr. A. E. Wright's brilliant discoveries.

Dr. A. WHITFIELD said that the amount of time necessary to determine the opsonic reaction was not so great that it could not be undertaken as a clinical method. He referred to the very slight tendency of tuberculous lesions of the skin to heal without treatment and out of many such cases he had only seen one get well. He referred to two cases of erythema induratum, both of which had done well when treated by injections. He did not believe that a low opsonic index was indicative of an inherited weakness but was due to some connexion with the tuberculous infection. He referred to the difficulty of determining a flow of serum to the part affected and suggested that thiosinamin might be injected which gave a reaction almost like the old tuberculin. He suggested that the old tuberculin in doses of $\frac{1}{1000}$th cubic centimetre might be used, as such raised the opsonic reaction but gave rise to no negative phase.

Dr. W. D'E. EMERY said that he did not believe that the opsonic index was proportional to the amount of opsonin present. When a sample of normal blood was diluted the index at first fell off gradually and then in proportion to dilution more rapidly. Thus with pure serum 25 cocci were present per leucocyte; with 4 parts of serum and 1 part of saline 23 were present instead of 20; with 3 parts of serum and 2 parts of saline 20 instead of 15; with 2 parts of serum and 3 parts of saline 16 instead of 10; with 1 part of serum and 4 parts of saline 10 instead of 5; and without serum but with 5 parts of saline 2 were present. Hence patients with an index of 0·5 were only about a quarter as well protected as a normal person. If the same held true for high indices it followed that a patient with an index of 2 was much more than twice as well protected as a normal one. He suggested that it would be possible to make an opsonic serum which could be used in rapid infections in which vaccines were not admissible.

Dr. A. BUTLER HARRIS said that it was most essential to use small doses of tuberculin; the larger dose of $\frac{1}{10}$th milligramme produced long negative phases with the attendant lassitude and depression. He believed that doses of $\frac{1}{10000}$th milligramme produced more rapid progress. He referred to two cases in young men in whom, without definite signs of tuberculous disease, there was ill-health with a variable or low opsonic index. Both these cases improved after tuberculin injection. In another case the presence of a normal opsonic reaction had been of value as indicating that the case was not tuberculous, although the physical signs in the chest pointed to it being so. A case of tuberculosis of the bladder in which the opsonic index was 0·3 also made rapid improvement after injections. In a case of lupus which had existed for 51 years the opsonic reaction was 1·5. By rest in bed this dropped to normal and the tuberculin injections were begun and the nodules rapidly cleared up. Other favourable cases were quoted.

Dr. WRIGHT, in reply to the President, said that he had not attempted, and did not propose to attempt, to isolate the various opsonins which were present in the blood.

Dr. W. BULLOCH said that after seeing the results of cases treated no line should be drawn between suitable and unsuitable cases, for some cases which had seemed most hopeless had yet done well.

Dr. D. LAWSON said that in Dr. Bulloch's series the opsonic index of patients discharged well was in 13 out of 14 cases below the normal. Out of 30 of his own cases apparently well one-third gave an index below normal. Out of these ten cases one had relapsed, and in this case the opsonic index was under 0·5. He thought that patients who showed a low opsonic index should not be discharged from the sanatorium until the index had been raised.

MEDICAL SOCIETY OF LONDON.

Discussion on Modern Methods of Diagnosis in Kidney Disease.

A MEETING of this society was held on Dec. 11th, Sir LAUDER BRUNTON, the President, being in the chair.

Mr. E. HURRY FENWICK opened a discussion on the Modern Methods of Diagnosis in Kidney Disease. The importance of both the medical and the surgical aspects was emphasised. Addressing himself first to the methods of ascertaining the secretory power of the kidneys, it was, he said, important to test the blood. Renal insufficiency was attended by the presence of toxic substances in the blood and these lowered the freezing point of the blood. The normal freezing point of blood was − 0·60° C. and this was lowered in pathological conditions to − 0·59° or − 0·57°. To detect disease in one kidney only was often very difficult but it could be ascertained by catheterisation of each ureter separately. There was, however, one danger in this method of examination—namely, the fear of conveying disease from the bladder to the ureter or kidney. Cystoscopy also was of the greatest value in difficult cases, as, for instance, in cases of hæmaturia the source of which was unknown. Four examples of this were narrated. In the diagnosis of the cause of pain also cystoscopy was of considerable value. A case in which retraction of the ureter, revealed by the cystoscope, indicated tuberculous disease of the kidney was also mentioned. Drawing up of one ureter (which could only be revealed by the cystoscope) might indicate tuberculosis of

the kidney on that side even in the absence of more specific symptoms; when tubercle bacilli were also present in the urine the diagnosis was practically certain and the kidney of that side should be removed. Mr. Fenwick then detailed the current opinions of various observers upon cryoscopy of the blood and urine, upon the phloridzin test, and the dye tests, such as methylene blue, indigo, carmine, and eosin (tests which depended on the rapidity with which these reagents were decomposed or eliminated by the urine), and he gave the fallacies and the limitations of each of these methods. From a medical point of view he considered that nothing was so important as a careful microscopical, bacterial, and quantitative examination of the urine over several successive days. He brought forward radiograms and lantern slides illustrating cases which revealed the value of cystoscopy, chromo-cystoscopy, ureter-cystoscopy, and radiography, and argued that all methods were uncertain when taken singly. Several radiograms were exhibited to show how extremely difficult it was to arrive at the true explanation of the appearances seen in an x ray negative. He stated that a diagnosis should never be founded on any one symptom or any one method alone, new or old, but that all should be employed, and only when the results of several coincided was it safe to form a positive diagnosis.

Mr. A. E. J. BARKER congratulated Mr. Fenwick upon his paper. Alluding to cystoscopy, which he had used constantly for several years, he was persuaded that it required considerable experience and was open to a good many fallacies, though it was of considerable value in many cases. It was, however, important not to draw conclusions from any one method. The relation of the freezing point to the osmotic tension of fluids was, he believed, the discovery of an Englishman named Blagden about the year 1840 or 1845. It was known as Blagden's law. German observers had only adapted this for testing the blood when renal inadequacy was suspected.

Mr. F. SWINFORD EDWARDS agreed with Mr. Fenwick on the limitations and fallacies of the x rays as a means of diagnosis of renal or ureteral stone. He also agreed that ureteral catheterisation was not without risk. He had used Luys's irrigateur in some cases, but this also was not without risk and fallacy.

Mr. CHARTERS J. SYMONDS remarked that the renal cases which gave most difficulty were tuberculous cases without definite evidences in the urine, and in these the cystoscope appeared to be of great use. It was also useful in some other cases.

Mr. J. G. PARDOE protested against the use of the cystoscope, except by those experienced in its use and in the explanation of the appearances seen. It was, however, of great use in many cases. In one case he referred to, which was thought to be a renal tumour, the condition was in reality due to a small vesical papilloma blocking the ureter.

Mr. FENWICK, in reply, referred to the Luys's irrigateur, which he said had this disadvantage, that the diaphragm did not always divide the two sides of the bladder completely and the urine passed from one side to the other beneath the diaphragm.

CLINICAL SOCIETY OF LONDON.

Treatment of Congenital Dislocation of the Hip-joint.—The Treatment of Peritonitis in Typhoid Fever by Laparotomy.—Septic Peritonitis occurring Early in Typhoid Fever.—Traumatic Pseudo-cyst of the Pancreas.

A MEETING of this society was held on Dec. 8th, Mr. H. H. CLUTTON, the President, being in the chair.

Mr. J. JACKSON CLARKE read a paper entitled "The Present Position of the Treatment of Congenital Dislocation of the Hip-joint," illustrating the subject by giving the results obtained by him in two series each of ten consecutive cases treated by Lorenz's manipulative method. In the first series of cases the ages of the patients varied from three to nine years and two of them were cases of bilateral dislocation; there were thus 12 joints. Of these nine (75 per cent.) were cured. In three the head of the femur was "anteverted" (as it had been termed) at the operation. Of these cases of anteversion one had relapsed, another was doubtful, and the third was firmly established, the head of the femur being placed beneath the anterior superior iliac spine and the new joint having a full physiological range of movement; the last-named patient was a girl, aged eight years, who had a bilateral dislocation and she now walked as firmly with the "anteverted" as with the other joint which was completely cured. In the second series of ten cases (the ages of the patients being from two to nine years(there were three bilateral dislocations. Complete anatomical reduction had been effected in every one of the 13 joints (100 per cent.). In neither series of cases was there any kind of operative mishap. In October, 1904, when Mr. Clarke had shown before the society one of the patients of Series 1 in an early post-operative stage, some scepticism had been evinced, but all doubt about the efficacy of the treatment was now completely removed. Mr. Clarke expressed the belief that irreducible cases would soon cease to exist and pointed out that his second series of cases went far to prove the correctness of this view. The paper was illustrated by lantern slides.—In reply to Mr. J. R. LUNN, Mr. CLARKE said that the proportion of females to males was nine to one and this was about the usual proportion. The best age for the operation was about three or four years; after five years of age it became increasingly difficult.

Dr. E. W. GOODALL communicated a case of Typhoid Fever with Peritonitis, not due to Perforation, in which Laparotomy was performed. The patient was a boy, aged ten years, who was admitted to hospital on August 21st, 1905, with typhoid fever, on the ninth day of the disease. He had a mild attack, with very slight abdominal symptoms, till August 31st, when in the morning he complained of abdominal pain; in the afternoon the pain was worse, the abdomen was rigid and moderately distended, the pulse-rate became more frequent than it had been, and the temperature rose to 104° F. From these signs it appeared to Dr. Goodall probable that perforation had taken place; accordingly laparotomy was performed. No perforation, however, could be found after a careful and prolonged search, but there was very acute peritonitis in the neighbourhood of the ileo-cæcal valve. The inflammation was most intense in the bowel close to the mesentery and in the mesentery, of which the glands were considerably enlarged. The lymph and serum were quite healthy. The abdomen was closed and the patient made an excellent recovery. The case was recorded: 1. As an instance of the difficulty in the diagnosis of perforation. 2. As an example of what, in Dr. Goodall's experience, was an unusual form of peritonitis in typhoid fever. If peritonitis were not due to perforation of the bowel or some other viscus it was usually most intense opposite the intestinal ulcers, indicating direct spread of inflammation, but that had not been so in this case. 3. The case also illustrated the slightness of the symptoms that might accompany peritonitis—at any rate, its early stages.

Mr. W. G. SPENCER read a paper on Septic Peritonitis occurring early in the course of Typhoid Fever without Perforation. He related the case of a boy, aged 12 years, under the care of Mr. W. A. Davidson of Shepherd's Bush, who was seized with acute pain in the abdomen followed by vomiting and abdominal distension. Signs of acute septic peritonitis were present on the third day with impaired resonance and resistance in the right ileo-cæcal fossa. The only feature in which this case differed from appendicitis was that the motions were pale, pasty, and odourless. There was no rash. At the operation peritonitis was found, with reddish turbid fluid in the pelvis. The ileum and cæcum, along with the appendix, were congested on the surface but not otherwise altered. The resistance previously observed had been due to enlarged mesenteric glands. After the operation the peritoneal symptoms subsided but the patient passed through a severe attack of typhoid fever, during which he was seen by Dr. W. B. Cheadle. Widal's reaction was obtained four days after the operation. The temperature became normal after five weeks. The wound healed without hernia. Four fatal cases of this kind had been recorded during the present year. In all the appendix was not diseased, there was no sign of perforation, and the ulcers had not extended to the peritoneal coat. Discussing the nature of these cases, Mr. Spencer expressed the view that they were due to a specially virulent infection spreading through the intestinal wall at an early stage of the typhoid fever. It is necessary to operate at once for the septic peritonitis without waiting to confirm the diagnosis of the typhoid fever.—The PRESIDENT, in discussing these two papers, remarked on the difficulty of diagnosis between appendicitis and typhoid fever. It was interesting to note that the incision seemed to do

good in cases resembling those brought forward, although no perforation had occurred.—Dr. F. H. HAWKINS (Reading) alluded to a fatal case of peritonitis in typhoid fever in which no perforation was found. In another case operation was performed and the patient recovered.—Dr. J. PORTER PARKINSON asked whether the occurrence of leucocytosis might be regarded as an aid to diagnosis and referred to a case in which it appeared to be of some use.—Mr. A. E. BARKER did not regard operation for peritonitis in typhoid fever as necessarily a desperate measure, though it might be so in some instances. Many cases were immensely improved merely by the operation.—Dr. GOODALL, in reply, stated that out of 54 fatal cases of peritonitis due to typhoid fever 39 were found to be due to perforation. In 15 cases no certain evidences of perforation were found but in three of these there were local evidences pointing to previous perforation. In all of these cases the ulceration was very deep and suggested extension as the cause of the peritonitis. He was not at all sure that his case would not have got well without operation, but, in his opinion, if the diagnosis of peritonitis was established immediate operation was fully justified.—Mr. SPENCER, in reply to a question as to the meaning of the term "septic peritonitis," remarked that there were three stages of typhoid fever in which peritonitis occurred; there was the very early stage, as in his case; there was the middle stage, in which the ulcer might be very deep and the peritonitis due to extension; and lastly, there was the later stage, when the peritonitis was probably due to perforation, in which operation was certainly desperate and generally done too late. In the first two classes the peritonitis was unattended by perforation and was probably due to septic absorption.

Mr. T. H. KELLOCK communicated a case of Traumatic Pancreatic Pseudo-cyst. The patient was a man, aged 20 years, who was kicked by a horse over the upper part of the abdomen on the day of his admission to the Middlesex Hospital under Mr. Henry Morris. For three weeks he was troubled by a continuance of the pain and occasional vomiting after food, the temperature was irregular, and the pulse was rather feeble. Evidence of fluid in the left pleural cavity was found but an exploratory puncture only drew off one and a quarter ounces of turbid sterile fluid. A few days afterwards the patient became worse and the upper part of the left side of the abdomen was found to be full and rigid but resonant on percussion; the heart's apex beat was displaced upwards to the third interspace. Under an anæsthetic an incision was made over the ninth rib in the left anterior axillary line and about one and a half inches of bone were removed. The diaphragm was adherent and on making an incision through this a large cavity was found from which clear fluid escaped at considerable pressure. The quantity of fluid that was collected was 88 ounces and on examination proved to contain pancreatic secretion. A drainage-tube was inserted and the operation was followed by great relief to the embarrassed respiration. On several occasions a fresh collection took place and brought on a return of the symptoms. The most satisfactory form of drainage proved to be a gum-elastic catheter through which the average quantity of fluid that was collected was just 28 ounces per diem. The amount of fluid escaping gradually diminished and five weeks after the operation the drainage was discontinued and the escape of fluid ceased abruptly. No abnormality was detected in the stools. The patient was discharged after about three and a half months' stay in the hospital, the wound being then healed. He was seen six months after his discharge; he was then in good health and was at work. Mr. Kellock referred to similar cases on record. In four of the eight cases reported the cystic formation had been consequent on a kick from a horse. He also commented, in connexion with his own case, on the position in which the incision was made, the large quantity of fluid evacuated, and the sudden and unexplained recovery of the resulting fistulous opening.—Mr. V. W. LOW had recently met with a similar case in a boy, aged six years, who had been run over. Later a tense tender elastic swelling was found in the right hypochondriac region. At the operation this was found to be a cyst containing clear fluid which had started in the pancreatic substance.—The PRESIDENT also referred to a similar case in which the pancreas had been bruised and fat necrosis had occurred. This change was similar in kind but different in degree to those mentioned by Mr. Kellock and Mr. Low in the cases to which they had referred.

OBSTETRICAL SOCIETY OF LONDON

Fixation of the Uterus and its Alternatives.—Repeated Tubal Gestation.—Sarcomatous Tissue in the Walls of Ovarian Cysts.—Exhibition of Specimens.

A MEETING of this society was held on Dec. 6th, Dr. W. R. DAKIN, the President, being in the chair.

Dr. G. ERNEST HERMAN opened a discussion on the Fixation of the Uterus and its Alternatives. He distinguished four classes of cases in which ventral fixation was useful: 1. Retroflexion without appreciable descent but with tenderness of the uterine body, not relieved by mechanical support. In these ventral fixation, Alexander's operation and vaginal fixation were equally effective; but ventral fixation was to be preferred. 2. Adherent retroflexion of the uterus with tenderness. Here ventral fixation was the only treatment so far as the displacement was concerned. But it must be advised cautiously (*a*) because the tenderness might be due to the condition of the peritoneum; (*b*) because many of these patients were neurasthenic and from either of these causes the operation might not be an immediate therapeutic success; and (*c*) because in these cases it was more dangerous. 3. Retroflexion without tenderness of the uterus, but with descent. Here ventral fixation was the only effective surgical treatment, but mechanical support, if effective, is to be preferred. Many of these patients were neurasthenic; and for that reason the immediate result of the operation might be therapeutically a failure. 4. Prolapse of uterus and vagina. Here ventral fixation was therapeutically a failure unless accompanied with elytrorrhaphy. Plus elytrorrhaphy it was successful. He considered ventral fixation less dangerous than Alexander's operation and more surely permanent than vaginal fixation. He considered the objections to ventral fixation, which were the dangers of sepsis, peritonitis from tension of the peritoneum, pulmonary embolism, parametritis, suppuration in suture tracts, tenderness of the scar, hernia, intestinal obstruction, and difficulty and danger in subsequent labour. He thought that if properly performed ventral fixation did not interfere with subsequent pregnancy or labour, and there was reason to think it might prevent miscarriage.—Dr. P. HORROCKS said that he could agree with practically all that Dr. Herman had said. But he considered that this operation was resorted to far too often, partly because sufficient time and skill were not spent in trying to remedy the condition and partly because some recommended and performed the operation without trying the effect of mechanical support at all. He considered that even when the uterus was well fixed to the abdominal wall it was an unnatural position which was not unattended by danger. Further, sometimes the operation not only failed to cure the patient but added to the old complaint a pain attributed to the scar and due, no doubt, to the dragging of the adherent uterus. And, unfortunately, in those cases where, owing to adhesions, the uterus could not be restored and maintained in position by mechanical means, the operation became much more difficult and dangerous. For these reasons he considered that ventral fixation was an operation only to be resorted to in a few cases where all other means had failed.—Dr. A. L. GALABIN said that he agreed with a large part of what Dr. Herman had said as to the scope of the operation of ventral fixation. But, personally, he preferred intraperitoneal shortening of the round ligaments in some of the classes of cases referred to and particularly where future pregnancies were probable. This operation was not open to the same objections as Alexander's operation, for there was no fear of the round ligaments not being found, of their tearing or being too weak, or of their nutrition being interfered with. The operator could tell exactly how much shortening was needed and could discover and deal with unexpected adhesions. He agreed with Dr. Herman that ventral fixation combined with elytrorrhaphy was the most effective operation in extreme and obstinate cases of prolapse, but he had known this even to fail and had found it necessary to remove the whole uterus, at the same time stitching together the broad ligament to form a band across the pelvis. As a preferable alternative to removal of the whole uterus and vagina, he suggested Lefort's operation, in which a median septum is made so as to form artificially a double vagina. It was a much less severe operation and he had never met with any case of recurrence of prolapse after it. In cases of retroflexion without much prolapse and without adhesions,

he thought that skill and perseverance with pessaries would almost always give relief.—Dr. HEYWOOD SMITH mentioned that he was the first to perform the operation of ventral fixation.—Dr. H. RUSSELL ANDREWS said that so many writers had made no mention of miscarriages and pain during pregnancy that it was difficult to arrive at a just estimation of these disadvantages following on ventral fixation. He thought that the difficulties occurring in subsequent labour had been under-estimated by Dr. Herman. Since his paper on the Effects of Ventral Fixation on Subsequent Pregnancy and Labour had been published he had come across the record of three cases of intestinal obstruction which seemed to be definitely due to ventral fixation.—Dr. G. F. BLACKER thought the operation of ventrofixation was a valuable one but that its indications were limited. He did not recommend it in women who were likely to become pregnant and had only once performed it in a single woman, a young girl who was suffering from severe prolapse of the uterus probably of congenital origin. The chief indications were cases of retroflexion of the uterus with adhesions and cases of prolapse of the uterus in women at or past the menopause who had to work hard for their living. He had seen considerable pain during pregnancy and secondary uterine inertia the result of very severe pains in the scar during labour follow a unilateral shortening of the round ligament in a patient who afterwards became pregnant and had to be delivered with forceps. In cases of prolapse he always performed a colpoperineorrhaphy and frequently amputated the cervix uteri as well.—Dr. ARNOLD W. W. LEA said that there was a small though real danger of intestinal obstruction following the operation of ventral fixation. Persistent abdominal pain and bladder symptoms following the operation were not always due to neurasthenia but were sometimes the result of extensive adhesions to the abdominal wall. He considered it essential that the fundus should be left free in patients who might subsequently become pregnant. In uncomplicated cases of obstinate retroflexion he gave the preference to intraperitoneal shortening of the round ligaments.—Dr. HERMAN, in reply, said he thought that when they found that after the operation delivery took place without difficulty in 94½ per cent. of cases, they might safely conclude that the difficulty in the remaining 5½ per cent. was not due to the operation as usually performed, but to some features special to each case, of which an unusual method of operating might be one.

Mr. W. GIFFORD NASH read a short paper on Repeated Tubal Gestation, in which he related a case which was successfully operated upon twice. On the first occasion the left tube was ruptured and was removed together with the ovary; on the second occasion, two years later, the unruptured right tube and ovary were removed. The symptoms on each occasion were very similar; there were a missed period, pains in the pelvis, vomiting, faintness, uterine hæmorrhage, rectal tenesmus, and passage of decidua. The dates of occurrence of the chief symptoms in each attack corresponded very closely. Soon after the onset of symptoms but before rupture took place a very perfect cast of the uterus was passed on each occasion. He asked whether it was possible to distinguish casts passed in cases of ectopic gestation from the decidua passed after an early ovum had been cast off from the uterine cavity.—Dr. C. J. CULLINGWORTH expressed the opinion that though the passing of a decidual cast from the uterus in a patient with tubal gestation might precede rupture it should be regarded as evidence that the ovum was dead. Cases in which a cast was passed in the absence of tubal gestation were so rare that the diagnostic value of this occurrence was not appreciably diminished.

Mr. FRANK E. TAYLOR, in a paper on Sarcomatous Tissue in the Walls of Ovarian Cysts, remarked that the development of carcinomatous and sarcomatous tissue in the wall of ovarian cysts, both adenomatous and dermoid, was probably of more common occurrence than was usually believed. But no criteria were available for the determination of the frequency of this condition. He related two cases and referred to numerous cases recorded by others. Clinically the sarcomatous change might or might not be indicated by the onset of symptoms, such as abdominal pain, ascites, rapid and irregular growth of the tumour, emaciation, and the development of cachexia. Recurrence usually followed ovariotomy in cases of cysto-sarcoma within a very short time and was singularly confined to the peritoneum. It grew with fearful rapidity and usually caused death within a few weeks, or at most months, after the performance of ovariotomy.

Mr. ALBAN H. G. DORAN showed a Fibroma of the Right Ovary which weighed 17 pounds. The patient had been under observation for ten years prior to the operation for its removal. Its presence was associated with ascites and with some adhesions to omentum and bowel. It seemed to have rolled forwards and to the opposite side some years before its removal. No evidence of malignancy could be detected in it. Mr. Doran also showed a Fibro-myoma which he had enucleated from the uterus in the second month of pregnancy. The patient went to term. The liquor amnii was excessive and the breech presented. The child was born alive and weighed seven pounds.

Dr. E. W. HEY GROVES showed a Ruptured Tube removed five weeks after the last regular period. The intra-uterine pregnancy pursued a natural course.

ROYAL ACADEMY OF MEDICINE IN IRELAND: SECTION OF PATHOLOGY.—A meeting of this section was held on Nov. 24th, Dr. Joseph F. O'Carroll, the President, being in the chair.—The President and Dr. H. C. Earl showed an Aneurysm which came off the aorta a little above the aortic valve. It lay between the aortic arch and the base of the heart and pressed on, and flattened, the pulmonary artery. There were hypertrophy and dilatation of both chambers of the right side of the heart.—Professor E. J. McWeeney described a case in which an aneurysm was situated in the thickness of the wall of the heart. It commenced near the sinus of Valsalva and penetrated for a distance of three inches into the septum and adjoining part of the wall of the ventricle. The heart was enormously hypertrophied, weighing 31 ounces. He called attention to the fact that it had recently been found possible to produce aneurysms in animals experimentally by the continual injection of extract of suprarenal capsule; therefore it would appear that one of the pathological factors in the production of aneurysm would be some toxin with a capacity for raising the arterial pressure.—Dr. Seton S. Pringle showed a specimen of Lymphosarcoma of the Mediastinum. The patient was a man, 30 years of age. The growth extended from the arch of the aorta to the upper border of the sternum; it also extended back on either side of the trachea and on the left side pressed on the œsophagus, while the right lung was extensively infiltrated and adherent to the growth above the root. The innominate and left common carotid were imbedded in the tumour, the two innominate veins were stretched over it, the right in one place being almost encircled by growth, the superior vena cava was practically surrounded, and the vena azygos major could not be separated from the tumour mass.—Dr. T. G. Moorhead exhibited a Lymphosarcoma of the Anterior Mediastinum. The patient from whom the specimen was obtained had first noticed an enlargement of the glands in her groin, neck, and axillæ two years previously. When she first came under observation in May, 1905, she presented the typical appearance of Hodgkin's disease, except that there was no splenic tumour. The leucocytes were reduced to 3000 per cubic millimetre and showed a relative excess of eosinophiles and hyaline cells. At the necropsy a typical lymphosarcoma was found in the thymic region and most of the cervical and axillary glands had extended beyond their capsule. An early blood count showed—neutrophiles, 68 per cent.; eosinophiles, 6 per cent.; lymphocytes, 17 per cent.; and hyaline cells, 9 per cent. There were slight nodules in the spleen, which organ was, however, unusually small. Dr. Moorhead expressed the opinion that the case was what was generally regarded as acute Hodgkin's disease and stated his belief that that process was identical with lymphosarcoma.—Mr. C. Arthur K. Ball showed a Renal Tumour removed by Nephrectomy from a married woman, aged 23 years. The tumour was first noticed by the patient herself five days after her confinement as a small lump which she could move about in the left side of her abdomen and which afterwards increased rapidly in size. It was removed exactly seven weeks after it was first noticed and was situated in the left kidney which weighed exactly three pounds, was very adherent, and was surrounded by large blood-vessels. The patient made an excellent recovery. Previously to operation, cystoscopic examination and segregation of the urine from each kidney established the fact that the functional power of the left kidney was lost.—Professor O'Sullivan said that the tumour was an encapsuled lobulated growth lying in the enlarged pelvis of the kidney which it completely filled. The kidney and tumour were inclosed in a single capsule, the kidney lying above the tumour.

There was a good deal of necrosis, with hæmorrhage into the necrosed tissue. The microscopic appearances were various, showing in different parts papillæ covered by cubical epithelium and spaces lined by a similar epithelium. —Dr. Moorhead exhibited the organs of a woman, aged 30 years, who during life had presented the symptoms of melanuria. She had suffered from an orbital tumour, for which the eye was enucleated in August, 1905. In September she was admitted to the City of Dublin Hospital suffering from enlargement of the abdomen and from breathlessness. The liver was found to be enlarged and to be studded all over with nodules and there was considerable ascites. The urine was of a light brown colour when passed but rapidly darkened on standing and ultimately became almost black. It gave a typical black colour with perchloride of iron (von Jaksch's test) and was also darkened by strong acids. There was no indican, sugar, or blood present. The bromine water test gave a black precipitate just like the others. Dr. Moorhead repeated both Nylander's tests and the copper test on two or three occasions. He got a slight reduction with copper but only on prolonged boiling, but Nylander's test came out unusually quickly. He employed the phenyl-hydrazin test but did not get any characteristic crystals. Neither the ascitic fluid nor the blood gave the melanin reaction. At the necropsy the liver was found to be enormously enlarged, weighing 13½ pounds, and was extensively infiltrated with melanotic growths of various sizes. Similar tumours were found in most of the other viscera and both ovaries had become converted into large unilocular cysts with melanotic walls.

GLASGOW MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on Dec. 1st, Dr. J. Walker Downie, Vice-President, being in the chair.—Dr. W. F. Somerville read notes on a case of Exophthalmic Goitre in a man treated successfully. The following treatment was adopted:—Isolation with complete rest in bed; the high frequency current twice a day and on alternate days five milliampères by the continuous currents (the positive pole being placed over the thyroid gland and the negative at the back of the neck); also heart massage. This treatment was continued for five weeks but during the last two weeks the patient was allowed out. Medicinal treatment consisted in giving two minims of strophanthus in tabloid form four hourly and five-grain thymus gland tabloids thrice daily. This treatment was still being carried out, except that no form of electricity was being administered and the thymus gland was stopped, drachm doses of syr. acid hydriodic being given instead.—Dr. Alexander MacLennan read a paper on, and showed specimens of, the Spirochæte Pallida. Schaudinn and Hoffmann were the first to draw attention to the spirochæte pallida and since their publication much work had been done. The organism had been demonstrated in chancres, secondary and congenital lesions, and in one case after the lapse of nine years. The preparations were made in the following manner: The surface to be examined was gently curetted to remove the superficial saprophytes, &c., and the serum after any bleeding had ceased was expressed. A smear was then made on a thin coverglass or on a slide. It was dried and fixed either by heat or by ten minutes' soaking in absolute alcohol. The preparation was then to be stained. A great variety of methods had been described but the gentian violet solution was probably the most certain. The specimens were all stained for about three hours with a very strong solution of gentian violet with a large proportion of glycerine which prevented the precipitation of the dye and kept the stain better in solution. The last specimen was stained with a saturated methylated spirit solution of the violet with an equal proportion of glycerine. A typical specimen of the spirochæte pallida from a primary chancre was shown. It illustrated the form and characters of this spirochæte and a slide showing the spirochæte refringens from a syphilide between the toes was exhibited for contrast. The spirochæte pallida was smaller, more regular in its waving, and stained much less deeply than the spirochæte refringens. Both organisms were motile and flagella had been found at the ends. The spirochæte refringens had a much greater scope in its movements and was altogether a coarser filament. A number of varieties in the characters of the spirochæte pallida had been described and Dr. MacLennan had seen one specimen with three arms and another with a head like a sperma'ozoon. Occasionally there was a straighter part in the middle of a long specimen. Where various types of spirochætæ were found together it was sometimes difficult to distinguish one from the other. The organism was readily seen under high powers in the living condition. The question of the specificity of the spirochæte pallida was still *sub judice*. The third specimen shown was the cytorrhyctes luis (Siegel). The organism was very small. A number of types of this germ were indicated. As a series of forms approaching more or less to those figured as spirochætæ were seen Dr. MacLennan suggested that the cytorrhyctes and the spirochætæ were the same organism but in different stages of development. So far little attention had been paid to the paper of Siegel and in all probability there was more to be said in its favour than for the spirochætæ. These bodies were found in two primary chancres and in the juice drawn from the enlarged inguinal glands by a hypodermic needle. Dr. MacLennan was not aware that this parasite had been found by anyone in this country.—Dr. John H. Teacher showed two freshly prepared films containing living spirochætæ.—Dr. D. N. Paton read a paper on the following question:—"Do we obtain the full therapeutic value of our anti-serums by present methods of administration?" Dr. Paton gave the results of seven and a half years' experience with the use of anti-serums by the mouth. The matters dealt with included (1) the oral use of simple plasma, with results in microbic and non-microbic disease; and (2) the oral use of anti-serum, principally antidiphtheritic serum: (*a*) in diseases for which the animal supplying the serum had been rendered immune; (*b*) in other microbic diseases; and (*c*) in non-microbic diseases. He considered that the action of serum orally used was neither antitoxic nor antibacterial; that with simple serum in non-microbic cases a reaction was produced leading to restoration of functions deficient through lack of nutrition; and that the same reaction was obtained in microbic diseases to which the animal supplying the serum was naturally resistant but in no other infections. As to the oral use of anti-serums: (*a*) in the diseases for which they were produced an increased systemic resistance was obtained; (*b*) in other microbic diseases antidiphtheritic serum orally used specifically raised the systemic resistance to the streptococcus and staphylococcus; and (*c*) that in non-microbic cases, as in shock or exhaustion post-partum, post-hæmorrhage, post-operative, or post-trauma, a marked reaction was obtained by the oral use of antidiphtheritic or antistreptococcic serums. The antitoxic and antibacterial effects were obtained by hypodermic exhibition of the serum. The systemic resistance was best obtained by the oral use of the serum.

HARVEIAN SOCIETY OF LONDON.—A meeting of this society was held on Dec. 7th, Mr. C. B. Lockwood, the President, being in the chair.—Dr. T. Seymour Tuke opened a discussion on the Attitude of the Medical Profession towards Insanity. He referred to the comparatively recent attempts which had been made to treat the insane and a historical retrospect of the care of lunatics was given. The general impression seemed to be that morbidity and insanity were on the increase, but in the absence of general registration trustworthy statistics were impossible. The contrast in the standpoint of the legal mind and the medical mind towards insanity was shown to be at present very glaring. Objections to the unsatisfactory character of the present Lunacy Act and especially the magisterial clauses were mentioned and Dr. Tuke showed the advantages of the Scotch procedure in the certifying of lunatics. Among the important causes of insanity were mentioned modern high pressure, love of luxury, excess, ease, and enjoyment, and drink, poverty, and misery at the extremes of the social scale. As regards treatment, the unsatisfactory nature and evil results of much that goes by the name of single care were emphasised. The callousness of the public and often even of relatives towards suicide in these cases was mentioned. Expert knowledge was most important. So far as the future was concerned, the medical profession must lead the way in all reforms.—Dr. T. Claye Shaw referred to the unsatisfactory attitude of the legal mind towards insanity and to the absurdity of going on with the trial of an insane person for murder before investigating the mental condition. Whatever might be the medical opinion there had to be taken into consideration the general view that insanity was looked upon as a stigma and this often explained the reluctance of friends to send a patient to an asylum. The question of expense not infreqently settled any hesitation to follow this latter course. He agreed with much that Dr. Tuke had said as regards the causes of insanity; stress and social conditions were powerful factors. Failing the assistance of the law and that of the church the medical profession ought to speak up against the corruption which went on in the streets, in some druggists' shops, &c.; medical men should address

themselves to the public and take them into their confidence. Laziness, inducing early senile decay, was to be combated, and in this connexion he regretted a medical authority's reported dictum that good work was not obtainable after the age of 50 or 60 years. As regards treatment, he asked whether it was what it ought to be in private homes or in public institutions. He was more hopeful of good now that bacteriological and pathological processes were better investigated. In view of recent researches on mind, on radio-activity, &c., the cultivation of the psychical side also offered more hope of therapeutic assistance.—Dr. R. Percy Smith referred to the difficulties in the way of the physician who might wish to remove patients from single care—difficulties on the part of the friends, difficulties introduced by the Lunacy Act of 1890 (the magistrate's certificate, the wording of the medical certificate, &c.). He contrasted unfavourably the position in England with that in Scotland. Public objection to registration of lunatics was strong. That only people with knowledge and experience should be intrusted with the single care of patients all must agree. In the case of the poor some borderland cases could be treated in general hospital wards with hope of recovery.—Mr. Campbell Williams inquired as to the proportion of cases of insanity directly or indirectly due to syphilis.—Dr. E. M. Payne inquired whether the present tendency of sending quite young children to school was not bad for the mind and might not lead to insanity.—Dr. T. B. Hyslop referred to modern squeamishness in treatment and thought that some of the older methods might be retained with advantage. He ridiculed the modern jargon and false euphemism of calling a mental breakdown disorder of the "nerves." The duty of the magistrate in the Lunacy Act of 1890 was most unsatisfactory. He spoke of the interesting observation that roughly the percentage of Anglo-Saxon mental failure remained fairly constant in the British Isles and Colonies but increased in face of the additional stress met with in other countries. Trustworthy statistics of insanity could only be obtained by registration, which should be extended to the unemployable. Additional obstacles were met with on account of the difficulty of establishing a standard between sanity and insanity. In dealing with the causes of insanity he referred to the all-powerful interests of the drink traffic in this country and to the irresponsibility of people (parents, &c.) leading to neglect of the young and the old.—Mr. H. C. Phillips and the President also spoke.—Dr. Tuke replied.

NOTTINGHAM MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on Dec. 6th, Mr. T. J. Dabell, the President, being in the chair.—Mr. A. R. Anderson showed a female patient, aged 52 years, from whom he six months ago removed the Right Gasserian Ganglion for Intractable Neuralgia. The history extended over six years. Three years before the present operation the inferior dental and subsequently both maxillary divisions of the fifth nerve had been divided but the pain eventually recurred. When the removal of the ganglion was undertaken the patient was the subject of chronic rheumatic change in the shoulder and hip and was a perfect wreck, physically and mentally, both with the pain and the narcotics she had had recourse to. The Hartley-Krause method was adopted and the ganglion removed piecemeal through the temporal region. A puncture of the cavernous sinus occurring towards the end of the operation was the only mishap recorded and this necessitated a piece of sterile gauze being used as a plug for two days. The intense pain was at present wholly relieved but the operation had left a considerable depression in the temporal region. The ophthalmic division was uninjured, so that there was no trophic lesion of the eye, but the right pupil was insensitive to greater or less illumination, remaining small, and some weakness of the left internal rectus muscle had produced diplopia. The right half of the tongue was insensitive to taste and other sensations and though the temporal, masseter, and pterygoid muscles were useless on that side no great inconvenience resulted. Hearing was good enough for all ordinary purposes. The case was discussed by Mr. Morley Willis, Dr. F. H. Jacob, Mr. R. G. Hogarth, and Mr. A. R Tweedie.—Mr. Willis read a paper entitled "Some Observations on Calculi," illustrated by specimens and cases and constituting a survey of calculus in different organs. In five of the cases it affected the biliary apparatus, in three the kidney, in two the bladder, and in one the submaxillary duct. In every case pain was present and there were often suppuration and pyrexia. In one of the renal cases, that of a girl, aged 21 years, as many as 16 stones were found in the pelvis and calyces of the kidney; the pain was a dull ache without attacks of colic and had lasted 18 months. The biliary cases were all women, their ages being 73, 39, 47, 55, and 54 years respectively. In the last case the gall-bladder was adherent to the transverse colon and the liver showed a thickening suspicious of malignant disease so that a considerable slice of it was removed along with the gall-bladder and the cut surfaces of the liver were sutured together. Columnar-celled carcinoma was suspected and confirmed microscopically and the patient's subsequent history bore this out. Mr. Willis emphasised (1) the importance of examining the urine by segregation so that the secretion of each kidney could be examined separately; and (2) examination by the x rays. He recommended enucleation of the kidney from its capsule before incising it in cases where difficulty in lifting it on to the loin through the incision was experienced; it was subsequently replaced after suturing the gland. The salivary calculus occurred in a man, aged 56 years, and presented a hard swelling at the angle of the jaw suggesting malignant disease or actinomycosis. Subsequently, a swelling occurred in the floor of the mouth and the calculus was detected. A speedy recovery followed its removal.—Dr. Jacob showed numerous X-ray Photographs of the Kidney with and without Calculus in it and pointed out the fallacies possible in the presence of fæces in that region. In another case three calcareous mesenteric glands gave an appearance similar to calculi. Renal sarcoma had also to be distinguished and it was important to centrifugalise the urine and to examine the deposit for tubercle bacilli.—The President, Dr. C. H. Cattle, and Miss Sarah Gray discussed the cases and Mr. Willis in his reply pointed out that the kidney could drain itself by the ureter unless the amount of pus present was large.

SHEFFIELD MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held in the University on Nov. 23rd, Dr. W. Tusting Cocking, the President, being in the chair.—Dr. W. Harwood Nutt showed a patient with Spleno-Medullary Leukæmia who had been treated by x rays. Before treatment the spleen reached to the level of the umbilicus. The liver was enlarged. There was pain over the ends of the long bones on percussion. The blood count showed 47·6 per cent. myelocytes, 65 per cent. hæmoglobin, 591,250 leucocytes per cubic millimetre, and 1,560,000 erythrocytes per cubic millimetre. There was a marked eosinophilia and nucleated red corpuscles and mast cells were present. The x rays were exhibited over the ends of the long bones, spleen, hips, and sternum for ten minutes at a time, giving two exposures daily. From March 1st to May 29th, 1905, 80 exposures had been given. This, combined with arsenic and rest in bed, resulted in the general symptoms disappearing. The spleen became smaller and softer. The blood count showed 4,183,333 erythrocytes, 75,000 leucocytes, and 95 per cent. hæmoglobin. A myelocytosis had given way to a leucocytosis of the polynucleated type. Since then, owing to less constant treatment, some of the old symptoms had reappeared. The spleen and liver had increased in size, the leucocytes had increased, and the erythrocytes and hæmoglobin diminished.—Mr. P. E. Barber read a paper on a series of cases of Cæsarean Section. If after careful pelvic measurement he found that a living child could not be born at term he advised either premature induction of labour or Cæsarean section. Before performing the operation it was necessary to measure the fœtal head and to see whether the head, if not engaged, could be made to become so, as children of the same mother might vary considerably in cephalic measurements, and although a previous cephalotripsy had been necessary it might be possible to deliver with forceps or by version. Of 14 cases of section 12 had been for contracted pelvis, one for obstruction by an ovarian cyst, and one for growths, probably osteo-chondromata, from the pelvic bones. There were 13 maternal recoveries and one death due to a previously contracted septicæmia and 12 living children. In one case the uterus was removed for fibroids. His experience was that some form of generally contracted pelvis was more common than the flattened, which agrees with Edgar's experience in New York but is contrary to Herman's. He insisted on the careful closure of the uterus with deep and superficial sutures. The three points of interest with reference to the operation were: (1) time of performance; (2) sterilisation; and (3) uterine adhesions. He advised waiting for the commencement of labour, as there

was less chance of hæmorrhage at the time of operation and after, although not so convenient in other respects. He advocated sterilisation by tying and dividing the tubes, firstly, to avoid the necessity for subsequent sections and, secondly, for the sake of the community. With regard to uterine adhesions to the abdominal wall in many cases where the organ, particularly when enlarged, could not get into the pelvis he thought that possibly tucking the omentum behind the uterus and the use of aseptics as opposed to antiseptics might minimise the chance of their formation.

LIVERPOOL MEDICAL INSTITUTION.—The first pathological meeting of this society was held on Dec. 7th, Sir James Barr, the President, being in the chair.—Several rare specimens were shown.—Dr. Ernest E. Glynn showed a Liver from a case of Miliary Tuberculosis which contained a number of small bile-stained abscesses and a spleen with multiple infarctions distributed over the substance of the organ and containing in their centre an artery which showed advanced proliferation of the intima, leading in some instances to complete obliteration.—Examples of Carcinoma in the Male Breast were shown by Mr. G. P. Newbolt and by Mr. W. Thelwall Thomas.—Mr. Thomas also showed a Hypernephroma and Professor B. Moore remarked that though at birth the suprarenal gland was relatively large it did not contain adrenalin.—Dr. W. B. Warrington exhibited a Liver in which the biliary apparatus was practically absent, being represented by a small amount of fibrous tissue, apparently the remains of the gall-bladder. The section showed marked cirrhosis and the bile capillaries were found to be injected even as far as their origin from between the liver cells.—Mr. D. Douglas-Crawford discussed the pathogenesis of such cases and concluded that the disease in this instance dated from about the sixth week of intra-uterine life.—A paper was read by Professor Moore giving an account of some researches undertaken by himself in conjunction with Dr. Herbert E. Roaf and Mr. Edward Whitley on the Chemistry of Carcinoma. The important points discovered by these investigators were: (1) that whilst hydrochloric acid was found to be absent in the gastric juice in about a quarter of the number of analyses made, in which the juice was obtained from hospital patients not suffering from any form of cancer, it was absent in two-thirds of those suffering from cancer, not of the stomach; this implied an increased alkalinity of the blood; and (2) that alkalies were capable of altering the normal cell growth and division of the eggs of sea urchins, producing multipolar, asymmetrical, and heterotype mitosis. Since in malignant disease the alkalinity of the blood to stable indicators was increased, showing an increase in the concentration of disodium phosphate, the life-history of the phosphorus metabolism in the body was of much importance.—Dr. W. Alexander, whose patients had chiefly been examined for the purposes of this research, then made the remarkable statement that in a number of the cases of carcinoma so extensive and adherent as to be inoperable the administration of hydrochloric acid and of acid sodium phosphate had resulted in a freeing of the growth from neighbouring structures, so as to permit of successful removal of the cancer. Perhaps the most remarkable instance quoted was one of carcinoma of the rectum in which the mass could be felt through the abdominal wall; a colotomy was performed and acid was given by the mouth. The patient, who last May at the time of operation was apparently near death, was now engaged in his occupation and no cancer growth could be felt by digital examination of the rectum. Whilst refusing to draw any certain inference from these cases, and recognising the occasional apparently spontaneous disappearance of cancer, Dr. Alexander considered that the treatment should be further investigated.

MANCHESTER MEDICAL SOCIETY.—A meeting of this society was held on Dec. 6th, Mr. W. Thorburn, the President, being in the chair.—Professor J. Lorrain Smith reviewed the results of recent investigations on the forms of disease associated with the typhoid-coli group of bacilli. It was shown that in each case the disease formed a clinical unity while the bacilli producing it might belong to more than one type. This conclusion applied to typhoid fever, dysentery, and meat poisoning, associated with Gaertner's bacillus and coli infections. Further, the study of the normal bacterial growth in the intestine showed the presence in the intestinal tract of a mechanism for the regulation of bacterial growth. From this it resulted that the small intestine was relatively sterile while the large intestine contained large numbers of bacteria. The disturbance of this mechanism led to the establishment in the small intestine (including the bile-ducts and gall-bladder) of a condition similar to that found in the colon. Many of the simpler ailments might be due, therefore, to a spread to the small intestine of the bacterial growth which was usually restricted to the colon. Conditions illustrating this were described in detail and in the same relation the etiology of various forms of anæmia was discussed. Finally it was contended that the presence of this mechanism afforded in some respects an explanation of the incidence of ulceration, &c., of infectious origin in the lower part of the ileum and in the colon.

KIDDERMINSTER MEDICAL SOCIETY.—A meeting of this society was held on Dec. 2nd, the President, Dr. O. C. P. Evans, being in the chair.—The President showed a very interesting Nervous Case and read notes on the same, including some from Dr. F. S. Toogood of Lewisham, under whose care the case was for some time.—Mr. J. L. Stretton showed a case upon which he had successfully performed pylorectomy for Carcinoma of the Stomach. Seven days after the operation fæcal oozing appeared in the wound, which proved to be due to a small hole in the transverse colon. He also showed a case of Tuberculous Peritonitis, successfully treated by drainage; a case of Malignant Pustule, treated by incision and Dr. Sclavo's serum; a case of Malignant Growth of the Nose, which was removed and a large skin graft placed in position; and read notes on a case of Appendicostomy upon which he had operated. Mr. Stretton also read notes and showed skiagraphs of a very rare condition—viz., Congenital Synostosis of the Upper Radio-ulnar Articulation.—Mr. W. H. Moore showed a large Sequestrum of the Fibula.—Mr. C. Dennis Fitch exhibited some large Gall-stones removed post mortem that had caused no symptoms during life.—Dr. Bertram Addenbrooke showed Radiographs of the Forearm in Mal-united Fracture; two Tumours of the Breast removed from patients, aged 72 and 27 years respectively; and read notes on three cases in which he had successfully performed the operation of Ventral Fixation of the Uterus.

LARYNGOLOGICAL SOCIETY OF LONDON.—A meeting of this society was held on Dec. 1st, Mr. Charters J. Symonds, the President, being in the chair.—Dr. P. Watson Williams showed an excellent specimen of a Rhinolith.—Mr. Barwell brought two cases of Ulceration of the Nose in phthisical patients which had healed under treatment, and a case of Lupus of the Larynx and Uvula which also had undergone cure.—Mr. P. R. W. de Santi showed a patient on whom Thyrotomy had been performed for Laryngeal Stenosis.—Dr. A. Brown Kelly showed a case of Sclerotic Hyperplasia of the Pharynx and Naso-pharynx in a man and two admirable sketches of Multiple Telangiectasis of the Skin and Mucous Membrane of the Nose and Mouth.—Dr. Peters exhibited a girl with a Polypus attached to an unusually Elongated Uvula.—Other cases were shown by Dr. Grant, Dr. Cathcart, and Dr. W. Hill.—Dr. E. Law reported the fatal termination of the case of a girl, shown at a previous meeting, with Incrustation of the Trachea and well-marked Stenosis, she having suddenly choked while kneeling.

THE NEW POST-GRADUATE SCHOOL.—The following hospitals have been affiliated to the new post-graduate school in connexion with the Seamen's Hospital at Greenwich: The Waterloo Hospital for diseases of children and women, the Bethlem Hospital for mental diseases, and the General Lying-in Hospital for midwifery. These additions to the teaching facilities enable the school to offer post-graduates opportunity for study in any department of medicine and surgery. The following gentlemen have consented to become lecturers: Diseases of the Nervous System, Dr. James Taylor; Mental Diseases, Dr. W. H. B. Stoddart; Hygiene and Public Health, Professor W. J. R. Simpson; Applied Anatomy, Mr. James Cantlie; Gynæcology, Dr. W. J. Gow and Dr. H. Williamson; Surgical Diseases of Children, Mr. H. S. Pendlebury; Surgical Diseases of Women, Mr. Russell J. Howard; Medical Diseases of Women, Dr. A. Haig and Dr. R. O. Moon; Medical Diseases of Children, Dr. C. O. Hawthorne and Dr. T. D. Lister; and Midwifery, Dr. W. R. Dakin and Dr. R. Boxall.

Reviews and Notices of Books.

Public Health Administration in Glasgow: a Memorial Volume of the Writings of James Burn Russell, B.A., M.D., LL.D., Medical Member of the Local Government Board for Scotland and formerly Medical Officer of Health of Glasgow. Edited by A. K. CHALMERS, M.D. Glasg., Medical Officer of Health of Glasgow. Glasgow: Messrs. MacLehose and Sons, publishers to the University. 1905. Pp. xxviii.–612, large 8vo. Price 7*s.* 6*d.*

IT was a good thought of Sir William Gairdner to suggest that the writings of the late Dr. James Burn Russell should be collected and republished in a memorial volume. The suggestion was taken up by the public health committee of Glasgow and has been given effect to in the work under review. The committee was very fortunate in putting into the hands of Dr. A. K. Chalmers, the present medical officer of health of Glasgow, the duty of collecting and arranging and editing Dr. Russell's writings. Dr. Chalmers has fulfilled his task excellently well. His knowledge of his distinguished predecessor's work and his own thoroughly competent appreciation of it have enabled him to group the re-published papers into such order as to constitute a real history of sanitation in Glasgow during the nineteenth century. To begin with, there is a preface by Sir William Gairdner who acted as advisory medical officer for Glasgow from 1863 to 1872 and who then recommended that Dr. Russell should be appointed a whole-time officer in his stead. The preface is followed by a biographical note by the editor, giving a brief and very readable account of the salient features of Dr. Russell's life, together with a well-written appreciation of his official career.

That Dr. Russell's days ended in time to permit his work to be commented on by Sir William Gairdner suggests a remark regarding the duration of life of the group of men who in the past 60 years in this country have devoted themselves to increasing the national longevity. Some of these—Simon, Rawlinson, and Chadwick—enjoyed an exceptionally prolonged and useful lease of life. Others—Seaton, Buchanan, Netten Radcliffe, and Thorne—have been cut off when, humanly speaking, there might still have remained to them long years of intellectual vigour and usefulness. Sir William Gairdner is of the former group and we rejoice that he is still spared to adorn the profession of medicine. Russell, alas, has been in the latter category and in his last decade he was a man in broken health with many periods of pain and confinement to his room. Yet the writings which are now re-published might well have occupied all the spare time of a full and healthy life, and indeed it almost appears that we are indebted to Dr. Russell's intervals of enforced rest from active administrative duty for some of his finest contributions to the literature of public health.

Though his last half-dozen years were devoted to the work of the Scottish Local Government Board Russell was essentially a Glasgow man. He was born close to Glasgow, was educated in its schools and University, and was associated there with its most distinguished teachers—Lord Kelvin, Sir William Gairdner, and Lord Lister. The biographical note shows that Russell was possessed of a rare diversity of mental talent. At college he was something of a poet—and, indeed, there is a sense in which he was a poet all his days. After completing his arts course he accepted from Professor William Thomson, now Lord Kelvin, an assistantship on board the *Agamemnon* during the first successful effort to lay the Atlantic cable between Europe and America, so that his services ran some risk of being altogether lost to public health. Afterwards, however, he returned to the university and graduated in medicine in 1862. Then he held appointments in the Royal Infirmary and the city poorhouse, and his entrance into the domain of public health may be said to have begun with his appointment as physician to Glasgow's first municipal fever hospital, after leaving which he became medical officer of health. Russell, it will be seen, was thus steeped in all the influences of Glasgow, to the amelioration and improvement of the physical conditions of which his life was to be devoted. His writings as here reproduced are embraced in 12 chapters. The title of Chapter I. is the First Half of the Century: a Period of Awakening. It is a wonderfully interesting page of municipal history. The growth of Glasgow from the latter part of the eighteenth century onwards was surprising and resembles rather what we are accustomed to look for in the great American towns in more recent times. The influence of the factory system was at work. Great industries were being established, and though the Clyde at Glasgow was still a small and an unimportant stream, yet commerce was developing lower down in connexion with the city. These changes were going on whilst there was practically entire absence of any real knowledge, or at least of any applied knowledge, of those principles of sanitation which are essential to render tolerable human life in a large and populous town. The natural results were a terribly high death-rate, especially among children, and an extraordinary prevalence of epidemic diseases including typhus fever and cholera and measles and whooping-cough.

It may be interpolated here that small-pox also had wonderfully abounded in Glasgow previously to the introduction of vaccination but Jenner's discovery was applied so early and so extensively that in spite of the constantly deteriorating condition of the population as regards all other infectious maladies, including consumption, the death-rate from small-pox exhibited a remarkable diminution and its course constitutes perhaps the most striking example that can be found of the power of vaccinia to control variola in presence of an utter neglect of every other element of public health administration.

No part of Dr. Russell's writings has more historical interest than that in which he quotes from earlier authorities descriptions of the insanitation of Glasgow at various periods in the first half of the nineteenth century. Take such a one as that relating to the year 1818 by Dr. Robert Graham, Regius professor of botany in the University. It is too long to quote in these columns but the conditions of life there depicted and their results are so appalling that it is difficult to believe that municipal awakening did not become anything like complete until after the first half of the century had passed.

One question which began early to receive attention was the provision of hospital accommodation for infectious diseases. The Royal Infirmary had been opened in 1794 and received medical and surgical and fever cases as might be required, but the infirmary was maintained by voluntary subscriptions and subscriptions were collected not merely from Glasgow but from all the surrounding neighbourhood, so that the institution received cases of infectious disease from the country as well as from the town. Naturally, when an epidemic occurred it soon became crowded and could take in no more and supplementary temporary structures also were quickly filled. Oft-repeated discussion took place regarding the duties of the Poor-law authorities in the provision of accommodation for fevers. It was as paupers only that such cases could be dealt with by parochial boards. The conception of the town council as a health authority, with a duty to isolate infectious diseases in order to protect the public, had hardly come into existence and it was only gradually, as a result of experience, and almost by a process of practical exclusion, that the view came to be held that the city should

provide for its fever patients. At last this was finally apprehended and in 1865 a municipal fever hospital of 136 beds was opened. By a remarkable stroke of good fortune Russell was appointed its physician and, no doubt unknown to himself, his real life-work was begun. Typhus fever and small-pox were the diseases with which he had mainly to deal. To begin with, he became quickly impressed with one outstanding drawback to the performance of his new duties. He was there for the medical treatment of the patients but the nursing of them was an unsolved problem. Russell in the introduction to his first hospital report for 1865–66 describes the nursing at this time as bad beyond belief. One sentence is typical alike of his views and of his vigour in expressing them: "At present nursing is the last resource of female adversity; slatternly widows, runaway wives, servants out of place, women bankrupt of fame and fortune from whatever cause, fall back upon hospital nursing." The present generation of medical men accustomed to the assistance of trained hospital and private nurses can hardly realise the nursing conditions of 40 years ago.

The hospital, opened in 1865, was used both for typhus fever and small-pox and it is very interesting to note how, with regard to the latter disease, doubt by-and-by arose whether hospital isolation was an unmixed blessing. The hospital was situated in the northern district of the city and suspicion was soon aroused in the mind of the district medical officer that it was spreading the disease in the surrounding neighbourhood. At first inquiry resulted in an open verdict of "not proven," but in the spring of 1873 Dr. Russell reported: "While I am not prepared to say *how* the hospital acts I am afraid it must be admitted that it does act in propagating the disease in the northern district." The result was that steps were at once taken to provide a hospital at Belvidere, an estate a short distance east of the city, and this was opened for small-pox in 1877. Commenting on the subject Russell remarked: "It will now be understood how with reference to the prevention of small-pox the date of the shutting of a hospital may be as noteworthy as the date of the opening of a hospital with reference to the prevention of typhus." This was written in 1895, no doubt in the light of Mr. W. H. Power's investigations at Fulham. Belvidere Hospital has now itself become more than suspect as an agency for spreading small-pox in the east-end of Glasgow and it in turn is being abandoned in favour of an entirely new institution, to be erected on a large area of land in an almost unpopulated district.

Coming now to the time when Russell gave up hospital work and began as medical officer of health, the memorial volume presents, for the purposes of review, quite an embarrassment of riches. Every chapter has its own interest and tempts to quotation relating to the first efforts of the new administration, a history of hospital accommodation, studies in vital statistics, and the like. Putting these aside, reference must be made to the remarkable series of papers on the housing problems of Glasgow. In 1866 a City Improvement Act had been passed but its administration had unavoidably been postponed for some years. Its primary purpose was the clearing away of uninhabitable houses and areas, a most important reform, but very incomplete in the absence of sufficient power to regulate the construction of new buildings. On this point Russell was especially insistent on the evils which result from the "making down" of larger self-contained dwellings into smaller houses of one and two apartments. The system of housing characteristic of Scotch towns greatly favours this abuse. In Edinburgh and Glasgow great barrack-like structures four or five or more storeys in height are subdivided into multiple dwellings, of which there are probably several on each flat, opening off lobbies or passages which themselves open off spiral stairways built either within the structure itself or in a turret at the back. An old mansion house readily lends itself to a "making-down" process by which each room or couple of rooms becomes occupied as a separate dwelling, the hall and stairway forming a common entrance for them all. The conditions of insanitation and indecency resulting from such a system drew forth Russell's strong indignation and an urgent appeal for improvement. He was continually bringing the facts before public notice by lectures to local societies and institutes. Perhaps the most eloquent of these calls for reform is a lecture on Life in One Room, in which, after telling how the exhausted air of such houses and the poor and perverse feeding produce bandy-legged children, many premature deaths, overlyings by drunken mothers, accidents by burning or by whisky poisoning, and so forth, he makes a fervent appeal to the better-off classes to assist in the remedy of such foul conditions.

This paper forms one of a group well classed by Dr. Chalmers under the title "Sociological Aspects of Sanitation." Another of this series is devoted to a trenchant criticism of Herbert Spencer's individualistic views as applied to sanitary measures. On this subject Dr. Russell indeed falls foul both of individualists and socialists. While he points out the utter absurdity of Spencer's suggestions for the individualistic provision of street sewers and paving and lighting, he holds that the Fabians and the author of "Merrie England" are as far astray in the opposite direction. The golden mean, he urges in effect, is to be found in sanitation: "As regards public health," he says, "in its relation to social problems, the difference between all these social architects and the sanitarian is this, the sanitarian is like the lifeboat or the lifebelt to the drowning man—'a very present help.' The theorist is like a lecturer on the art of swimming—any good he may do is in the future. He certainly will not help the drowning man."

Following on the lecture devoted to sociology comes a series of studies in epidemiology and clinical studies. These relate to all the ordinary infectious diseases and include papers on the Requirements of a Dairy Farm, Animal Poisoning by means of Hair, Stimulation in Typhus Fever, and an altogether admirable Study of Small-pox with relation to Vaccination, in which is illustrated very graphically the "drift" towards renewed susceptibility to small-pox with lapse of time after primary vaccination and the consequent need for repetition of the operation. Other papers are a Report on the Prevention of Tuberculosis with reference to the executive measures which might be prudently adopted to apply the teachings of science as to the mode of spread of that disease, two articles dealing with the Principles and Practice of Disinfection and a concluding paper on Dead Meat Inspection in which the author distinguishes between what he describes as the detective system and the clearing-house system, the latter being advocated as alone trustworthy.

Dr. Russell occupied a unique position in Scotland. Though the northern kingdom is now well abreast of England in respect of the sanitary administration of its large cities and is, owing to good legislation, well in advance of English standards in its rural districts, yet so recently as 20 years ago it was far behind. Up to 1890 Glasgow was the only place in Scotland which had a whole-time medical officer, so that Russell had in great measure to work out his own problems. His eloquent pen caused what he said to be noticed fully in the newspaper press and his high moral purpose and the fact that much of his teaching was addressed rather to the public directly by means of local societies and congresses than through official reports gave him a wide audience and great influence. He was singularly well fitted to use his influence for the general benefit and Scotland to-day is unquestionably the better because of the fact that Russell lived.

The whole memorial volume is one of the finest works which have ever been published on public health subjects. Its value is by no means confined to readers of the official class. All who are engaged in municipal work and who are interested in the solution of the most pressing problems of city life will find it a storehouse in which suggestions for the future flow naturally from experiences of the past. And from beginning to end the writing is so exceptionally good, the English language is used with such skill and force, the knowledge of the whole subject is so thorough, and earnestness of purpose is so controlled by dictates of prudence that the book combines in quite unusual fashion the qualities of a literary treat with those of a learned treatise. It is published, too, at the very modest price of 7*s.* 6*d.*, a figure which is possible only because of a large contribution to the cost made by the corporation of Glasgow.

Ambidexterity. By Sir SAMUEL WILKS, Bart., M.D. Lond., LL.D. Edin., F.R.S. A lecture delivered before the Hampstead Scientific Society on May 12th, 1905. London: Sydney C. Mayle, 70, High-street, Hampstead. Pp. 16. Price 3*d.* net.

A REVIEW of a work on Ambidexterity which we published on Oct. 28th, p. 1262, has induced Sir Samuel Wilks to send us a pamphlet which is a reprint of a lecture delivered before the Hampstead Scientific Society in May, 1905. We heartily commend this lecture to all who may be interested in the subject of left-handed culture, since it points out in a most lucid manner the limitations of the use of the left hand and exposes the fallacy of the belief that true ambidexterity simply consists in teaching the left hand to copy slavishly movements which have been acquired by the right. The eminent author points out that the left hand is not an exact copy of the right but if we may coin an expression is its "complementary inverse"—i.e., the natural writing for the left hand is "mirror writing," the thread of a screw intended to be driven in by the left hand should be the reverse of that intended for the right, and so forth. Hence it follows that to train the left hand to copy the writing of the right cannot be the foundations of ambidexterity as some maintain but is based on an ignorance of anatomical details. It must not be inferred from this that Sir Samuel Wilks would discourage the training of the left hand, far from it; what he does urge is that the left hand should be trained to do on the left side of the body *similar* things to those performed on the other side by the right. To do this it will naturally move in the reverse direction to that taken by the right hand.

Anatomy and Physiology for Nurses. By LEROY LEWIS, M.B., Surgeon to, and Lecturer on Anatomy and Physiology for Nurses at, the Lewis Hospital, Bay City, Michigan Illustrated. London and Philadelphia: W. B. Saunders and Co. 1905. Pp. 317. Price 7*s.* 6*d.* net.

WE learn from the preface that this book is the outcome of numerous requests made to the author by those whom he had instructed in anatomy and physiology. The volume is not very large and the field which he has attempted to cover is very extensive. Accordingly, although the statements made appear on the whole to be fairly accurate, the book lacks life and interest. The anatomy appears in the form of bald tabulations of the origins, insertions and actions of muscles, of the relations and branches of arteries, of the names and tributaries of veins, and of the names and distributions of nerves. Although illustrations have been freely added it is obvious that any attempt to gain a useful knowledge of anatomy from such a tabulation is foredoomed to failure unless accompanied by appropriate demonstrations. The physiological side of the book will appeal much more to the class of readers for whom it is intended but we doubt if an attempt to teach nurses anatomy on the lines adopted in this book is anything more than a great waste of time and it appears calculated to induce a condition of mental weariness which is most detrimental, for there is nothing to be done but to commit to memory, parrot-wise, a mass of dry and uninteresting details. The sooner this is recognised the better for all concerned. To the medical student anatomy becomes a living science owing to the opportunities of dissection and observation. To nurses only such anatomy should be taught as can be actually demonstrated; to expect them to commit to memory a mass of other details is sheer folly.

Ellis's Demonstrations of Anatomy. Twelfth edition, revised and edited by CHRISTOPHER ADDISON, M.D., B.S. Lond., F.R.C.S. Eng., Lecturer on Anatomy, Charing Cross Hospital Medical School; formerly Hunterian Professor, Royal College of Surgeons, England; Examiner in Anatomy, Royal College of Surgeons, England, &c. Illustrated by 306 engravings on wood, of which 75 are in colour. London: Smith, Elder, and Co. 1905. Pp. 851. Price 12*s.* 6*d.* net.

NOT many years ago Ellis's Demonstrations was the favourite guide for dissecting-room use and an attempt has now been made to reinstate the book in its old position. The volume has been thoroughly revised and re-arranged by Dr. Addison. As might be expected, the most extensive alterations are found in those sections which deal with the abdominal and thoracic viscera. The descriptions here have been brought abreast of modern knowledge and the editor has incorporated some of his excellent and well-known diagrams illustrative of visceral topography. The arrangement of the book has been altered, inasmuch as it now follows the ordinary course of dissection, beginning with the extremities, but the general character remains as before. The marginal notes and tables of vessels and nerves are still retained. They are decidedly useful for revision purposes. We notice many new illustrations; the arteries now appear in colour and coloured diagrams indicate the bony attachments of muscles. The volume retains its handy size and lightness. Of necessity the type is rather small but it is clear, and the inclusion of the whole in one volume as in former editions quite counterbalances this fault. Those who wish to have a sound and useful anatomical treatise in one volume may still be recommended to consider this book. It is eminently practical and devoid of superfluous matter.

LIBRARY TABLE.

Guide to Finger-Print Identification. By HENRY FAULDS, L.F.P.S. Glasg., late Surgeon-Superintendent of Tsukiji Hospital, Tokio, Japan. Hanley: Wood, Mitchell, and Co. 1905. Pp. 80. Price 5*s.* net.—This work contains a clear account of the principles of dactylography or finger-print study; a description of the various methods of examining and vivifying dull prints chemically; hints as to ways of enlarging them by photography; and methods of meeting the various practical difficulties of finger-print identification. Each important point is illustrated by diagrams, finger-prints, and photographic enlargements. Mr. Faulds's book aims at giving in a compact and portable form, and without unnecessary technicalities, the main facts and principles likely to be found useful in medical and legal inquiries involving identification by this method. The author rightly thinks that the readings of finger-print evidence should be submitted to the scientific expert who alone can keep this kind of evidence free from fallacy; to depend upon partially skilled persons must be a grave danger from a public point of view.

The Cathedrals of England and Wales. By T. FRANCIS BUMPUS. First Series. London: T. Werner Laurie. 1905. Pp. 282. Price 6*s.* net.—A well-known author recently advised a neurotic friend "to bathe himself in Gothic," and in this, the first instalment of the work, Mr. Bumpus, who is well known as an accomplished and a travelled ecclesiologist, has

presented us with an exhaustive description of the glorious mediævalism of nine of our English cathedrals—viz., Durham, Ely, Lincoln, Salisbury, Worcester, Hereford, Chichester, Chester, and Bristol. In a book dealing with English cathedrals the author rightly claims for ancient English art the highest possible place; indeed, he does not hesitate to affirm with regard to sculpture that in the thirteenth century the English school was superior to the Italian; while with regard to architecture he proves that the architect of that superb structure, Lincoln Cathedral, was an Englishman whose descendants exist in that county to the present day. The sister art of music also finds full place in this volume and amongst other interesting facts relative thereto we are told that the first four-manual organ in England was built as early as 1710 by Renatus Harris for Salisbury Cathedral. In the introductory sketch the author gives one of the most complete histories that we have read of the Gothic Revival in England. The book is enriched with many beautiful illustrations, and the busy professional man with a taste for art and with but little time to fare far in search of it will find it a delightful as well as an instructive companion during the scant moments of his leisure.

A Beggar's Wallet. Edited by ARCHIBALD STODART WALKER. Pp. 291.—This handsome volume is described on the title-page as a collection of "Contributions in Prose, Verse, and Pictorial Illustration" sent by upwards of 50 authors and artists in response to the editor's invitation. The "Beggar" is, in fact, the editor himself and his "wallet," which is resplendent externally with scarlet and gold and is embellished within by many full-page illustrations, was on sale at a bazaar held at Edinburgh in November for the benefit of the Royal Victoria Hospital for Consumption in that city. Among such a multiplicity of work by so many hands detailed criticism would be impossible, but it may be mentioned that the first six pieces are as follows:—"The Seasons," a poem by Mr. Eden Phillpotts; "Literature and History," by Mr. G. W. Prothero, editor of the *Quarterly Review;* "Silence," a French poem, by Lady Margaret Sackville; "Dogs of Celebrated Edinburgh Men," by Eve Blantyre Simpson; "Heliodora," a poem by Mr. Justin Huntley McCarthy; and "Tidemarks of Battle," by Mr. Douglas Story, lately war correspondent with the Russian forces in Manchuria. The title-page instead of giving the name of the publisher mentions that the printers are Messrs. Dobson, Molle, and Co., Limited, of Edinburgh and London.

JOURNALS AND MAGAZINES.

The Dublin Journal of Medical Science (November).—Dr. Charles G. Cumston deals at length with the subject of Extra-articular Tuberculosis of Bones and lays stress upon the importance of early diagnosis of what otherwise develops into a most serious affection. By way of treatment of advanced cases he speaks highly of Lannelongue's "sclerogenous" treatment by injections of chloride of zinc into the neighbourhood of the lesions. He admits, however, that the method is so painful that patients often refuse to continue it. In view of the curative powers which have been attributed to violet leaves, especially in cases of cancer, Mr. H. Wippell Gadd has examined their chemical properties. He found present a glucoside, previously identified by Mandelin with quercitrin, and also obtained from the dried leaves an oily material, but throws no fresh light upon the therapeutic properties of either substance.

The Edinburgh Medical Journal.—The original communications contained in the December number of this journal are of more than average interest. Mr. A. W. Mayo Robson deals with Chronic Pancreatitis, a subject upon which he has made himself perhaps the leading authority, and points out the symptoms which may enable a diagnosis of this condition to be made during life. We are glad to see that he allows a period of medical treatment in pancreatic cases before operation is resorted to. Professor J. Arthur Thomson writes on Heredity, his article being practically a review of Dr. G. Archdall Reid's book, "The Principles of Heredity." He recommends the study of this subject as of importance to all medical men, but we fear that his paper, seeing that it deals rather with the subtleties of the subject than with its broad outlines, will hardly prove an inviting introduction. Dr. R. W. Philip contributes a valuable summary of the proceedings of the recent Tuberculosis Congress, which should be read by all who have not otherwise followed the labours of this assembly. Dr. David Fraser Harris writes on Psychochromæsthesia, or Sensation of Colour accompanying Mental Concepts, and Dr. J. Wright Mason describes the Injuries Inflicted by the Russian Cannonade upon the Victims belonging to the *Gamecock* Fishing Fleet.

Looking Back.

FROM

THE LANCET, *SATURDAY*, Dec. 15th, 1827

A *pure* surgeon is one who holds out to the public, that he is ready to prescribe, but not to dispense, medicine to his patients, and that he expects the sum of twenty-one shillings for every prescription or visit his patients receive from him, saving, moreover, the right which the law gives him, of bringing his action in cases of non-remuneration, or what he may deem inadequate remuneration for any operation he may perform. It is evident that there is no limitation as to the time at which a member of the College may call himself a *pure* surgeon; a veteran retailer of drugs, who may happen also to be a member of the College, may, at any time, shut up his shop, and declare his purity, or purity may be professed immediately after a student's examination and admission. The ratio of the *soi-disant* Pures, to the great body of English surgeons, is about one to three hundred; supposing, therefore, that this class is, to a man, hostile to the cause of medical reform, its hostility will not be of the smallest practical importance.

We of course restrict these observations to the *soi-disant Pures* of the surgical profession. We admit that men who have attained great eminence in their profession have a right, in effect, to make their own terms with the public; and that superior ability in the medical, as in all other professions and pursuits, is entitled to superior remuneration. But the fact is, that, in the surgical profession, the superior remuneration is claimed by men who are not entitled to it on the score of ability, but whose pretensions are founded on the holding of offices, for which they are indebted, not to their professional merits, but to the influence of corruption. Let the public look, for instance, at the manner in which hospital surgeons, for the most part, obtain their situations, and decide whether it is possible that fair play can be given to the development of the average amount of talent that might, under a different system, be fostered in those institutions. SIR ASTLEY COOPER on one occasion publicly declared, that there was not a hospital surgeon at ST. THOMAS'S and at GUY'S, who was not either his nephew, or his niece's husband, or connected with him more or less closely by ties pecuniary or domestic. What are the consequences of a system which is thus unblushingly admitted to be founded in corruption? Our hospital surgeons are not only inferior to men holding similar situations in other countries, but they are below par, in point of professional information, as compared with practitioners at home. Some of them are the laughing-stocks of their assembled pupils; some few of them acquire considerable dexterity in the performance of particular operations; but we repeat, that as a body, they are below par in point of professional information, and know less of pathology, less of the nature and treatment of disease, than the mass of general practitioners. Yet these hospital surgeons are Pures *par excellence.* If there be one English surgeon more entitled than another to any distinction that may be due to superior professional attainments, it is Mr. LAWRENCE; but this eminent individual scouted, it will be recollected, at the general meeting of practitioners, the designation of *pure* surgeon, and identified himself with the great body of the SURGEONS OF ENGLAND.[1]

[1] Excerpt from leading article headed "The Bats and the Pures."

THE LANCET.

LONDON: SATURDAY, DECEMBER 16, 1905.

The Royal Commission on the Poor-laws.

WHILE the appointment of the Royal Commission on the Poor-laws and the scope and terms of its reference appear to be generally acceptable to the public, indications of dissatisfaction with its composition have found expression in many quarters, and have been mainly based, so far as they have fallen under our notice, upon the absence of persons, or of classes of persons, whose various forms of knowledge would be likely to afford useful guidance in relation to particular aspects of the questions which will have to be considered. We published last week a letter from Mr. F. R. HUMPHREYS, complaining of the absence of any "independent medical expert," and pointing out that this deficiency is not supplied by the presence of Dr. A. H. DOWNES who, although an eminent medical official of the Poor-law side of the Local Government Board, cannot make up for the lack of independent medical men, "free from the habitual trammels of red tape and of tradition founded upon the prevention of idleness and not upon the treatment of disease." Dr. A. SHADWELL in the *Times* has called attention to the absence of representatives of agricultural and of manufacturing districts, a complaint supported, so far as the former are concerned, by Mr. H. G. FORDHAM; and Dr. F. E. FREMANTLE, the medical officer of health of the county of Herts, asks for representation of the county council system, especially on the ground of the probable transference to these councils of the duty of superintending vaccination and on that of the manifest propriety of rendering the medical department of the Poor-law a branch of the general sanitary system of the country. There seems to be much weight in the whole of these representations; and even although there might be practical objections to an undue increase in the mere numerical strength of the Commission, it cannot be denied that deficiencies calculated to diminish its usefulness should be supplied before it is too late. It may be urged, of course, that the present members may obtain full information from witnesses upon points as to which their own knowledge may be incomplete, but this argument can only be accepted to a very limited extent. A certain amount of special knowledge is sometimes necessary to the mere comprehension of evidence and, still more frequently, to the power of forming an adequate estimate of its value. We greatly doubt, for instance, whether the physiological bearings of the case, the relations of poverty to the intellectual decadence and physical degeneration of large classes of people and of their offspring, would be likely to make an impression adequate to their gravity upon the intelligence of the average economist; or whether the real national importance of the permitted prevalence of disease would be any more correctly estimated by a practically non-medical Commission than it has been by the successive Parliaments under which the systems of administration now flourishing have been created and maintained. We entertain no doubt that the addition of one or two medical members to the Commission, even if they were compelled to prepare a minority report, would be of great value to the public and would at least pave the way for an adequate consideration of the vast interests which it would be the duty of such members to represent and to maintain.

By the terms of their reference the Commissioners are instructed to inquire: (1) into the working of the laws relating to the relief of poor persons in the United Kingdom; (2) into the various means which have been adopted outside of the Poor-laws for meeting distress arising from want of employment, particularly during periods of severe industrial depression, and to consider and report whether any, and if so what, modifications of the Poor-laws or changes in their administration or fresh legislation for dealing with distress are advisable. This is all; and it will probably be maintained by official persons that the consequent inquiry will not be sufficiently extended in its scope to call for the assistance of medical Commissioners in conducting it. The argument would sufficiently refute itself if it were applied to cover either the absence of representatives of agriculture and of manufacture, or the generally metropolitan character of the Commission as a whole, and we do not see that it can be sustained even against the objections raised by Mr. HUMPHREYS. "The working of the laws relating to the relief of poor persons in the United Kingdom" is a description which certainly includes the whole subject of medical relief; and the subject of medical relief is intimately associated with that of national sanitation. It is perfectly well known in rural districts that one of the chief factors in local epidemics is the tramp and it is not too much to say that the suppression of vagrancy would be followed by a material diminution in the prevalence of many infectious diseases and by the saving of many lives. The tramp as he is ordinarily met with, filthy, ragged, verminous, a hotbed for the growth and propagation of everything to which the term "saprophytic" can be applied, a systematic pilferer when he is not a professional thief, and with a female of his own class following in his wake, is at present, so long as he does not commit any special outrage, practically at liberty to follow his own devices and to carry infections about with him at his own sweet will. Our national tenderness for the liberty of the subject has hitherto extended to him an amount of toleration which those who know him best are the first to regret, and it is clearly needful that other arguments for the restraint of his activities and of his power to reproduce his kind should be reinforced by driving home the facts which elucidate his importance as a carrier of disease. Apart from him, it may fairly be questioned whether the sums expended in medical relief are so directed as to afford the largest attainable amount of benefit either to the individuals concerned or to the community. It is certain that many medical officers under the Poor-law are very inadequately paid for their services and that a great deal of the attendance given to the sick poor is given under conditions

which greatly militate against its permanent utility. The whole system requires to be thoroughly overhauled and reconsidered, more especially, perhaps, in relation to Ireland; and we cannot hesitate to say that the presence of an experienced parochial medical officer from each division of the kingdom would materially strengthen the Commission and would be likely to add greatly to the value of its conclusions. We desire to pay a full tribute to the abilities and to the fair-mindedness of Dr. DOWNES, but we should nevertheless like to see the non-official mind brought into coöperation with his in regard to many of the facts which will come before the Commission. Again, we feel that in respect of Irish affairs someone should have been appointed with a knowledge of the position of the general practitioner, and especially with sympathy for the situation of the Medical Dispensary officer. Sir HENRY ROBINSON, vice-president of the Irish Local Government Board, does not fit this description, as the differences of opinion between his Board and the officers of the Dispensary Service are notorious.

There is yet another branch of the inquiry, not, indeed, mentioned in the terms of reference but still absolutely underlying nearly everything to which those terms relate and to which, so far, we have seen no allusion. The late Dr. WALTER MOXON once contributed to a volume of essays on the consumption of alcohol one to which he gave the title "Why did he become a sot?" In every period of slackened employment it is manifest that a certain number of men will be displaced for a shorter or longer time, and experience shows that while some of these will be at work again as soon as opportunity is afforded to them, others will certainly degenerate into permanent idlers. Why is this? What is the real nature of the difference between the industrious artisan and the incorrigible loafer? We heard of a case last week in which a man who asked for alms was given a meal and a job for which he was to be paid. He did not finish the job by nightfall but returned the next morning and asked for breakfast before he set to work. When he had eaten the breakfast he expressed his intention of departing forthwith. "Will you not finish the job before you go?" "Not me," he answered; "why should I? Why should I work when I can go on the Fund?" And so he took his departure, leaving behind him the problem, "Why did he become an idler?" This problem is presenting itself to-day in very numerous instances but it is not on that account a new one. It is as old as human nature and it belongs to the domain of anthropology. There must be some determining condition in the case, some law of heredity or of development as a result of which the human animal turns his back upon industry and becomes a vagabond. If there be a law it must be discoverable by diligent inquiry and a knowledge of it would at least enable us to form some forecast of the magnitude of the evil for which it is accountable, possibly to devise some measures of prevention or of limitation. The tendency is most plainly manifest in the poor, perhaps only by reason of their preponderating numbers, for it is not confined to any class, nor is it peculiar to the comparatively uneducated. Most of our colonies contain a certain proportion of persons who are locally known as "remittance men" and who, occasionally at least, are of good family and creditable antecedents. Whether at home or in the colonies the type is the same, slightly modified, perhaps, by accidental circumstances but everywhere suggesting the same inquiry. How are those persons to be classified who lose self-respect at the first touch of adversity and, when classified, how are they to be helped? The inquiry has become a large one and it underlies nine-tenths of the work of the Commission.

Evolution and Religion.

To students of social problems the attempt to draw valid analogies between the State and the individual has always been a fascinating subject of inquiry, and this field of speculation has gained rather than lost in attractions since the theory of evolution has become pre-eminent in biological science. Not, indeed, that this theory is limited to biology, for, as was pointed out by Professor G. H. DARWIN in his masterly address to the British Association for the Advancement of Science at its meeting in South Africa, the same law of the survival of the fittest reigns in the physical world, embracing alike the infinitely great and the infinitely little, the growth of stars and constellations, as well as the persistence of molecules and atoms. It is evident, therefore, that on this theory must be founded, on the one hand, our explanation of the development of empires and kingdoms and, on the other, of all the faculties exhibited by living beings. The latter problem, embracing as it does the origin of some specially human characteristics such as moral and religious ideas, has long been recognised as one of great difficulty.

A recent attempt at a solution set forth in a little book called "The Unit of Strife," by Mr. E. K. GARROD[1] is interesting as a specimen of such speculations. The author starts by pointing out that in the living world the lowest and earliest form of individual existence is the single cell, and that these cells constituted the first units among which the struggle for existence took place. In course of time multicellular organisms were evolved, apparently by the occurrence of varieties of unicellular organisms, in which parent and daughter cells remained adherent instead of separating and pursuing different ways. In these complicated beings, which constituted the units of strife at a later stage of existence, the component cells became specialised so as to perform different functions, and the more perfectly this specialisation was carried out the better was the individual fitted to survive in the race of life. Later still, in certain instances, instead of the organisms separating and fighting for themselves some of them adopted the plan of remaining together and helping one another, and thus the simplest form of social unit, the family, was evolved. By coalescence of families tribes were formed and later larger States and empires grew up, these in turn constituting the units in the struggle for existence. In these complex political units, as in the multicellular animals, a specialisation of function takes place, and the better this is carried out the more fitted is the State to survive. What we call the advance of civilisation consists largely of this growth of specialisation. Some forms of polity are more fitted than others for development and adapt themselves more easily to changing conditions by reason of their

[1] The Unit of Strife, by E. K. Garrod; London: Longmans, Green, and Co., 3s. 6d.

political flexibility; and the author draws an analogy, which, perhaps, is a little strained, between military despotisms, with their fortified towns and frontiers, and the forms of animal life, such as the insects and crustaceans, which have developed a hard external coating of armour and have thus limited their future powers of adaptability. Now, in order that specialisation of function may be satisfactorily carried out by the individuals of which a State is composed, it is necessary for each to subordinate his personal interests to those of the community, and this subordination is effected by means of the moral and religious faculties. It is not, indeed, impossible for considerable degrees of social organisation to exist without these, as we see in the case of the ants and bees, to which we can hardly attribute morality or conscience; but in the case of a highly self-conscious animal, such as man, it is evident that the self-regarding instincts must constantly come into collision with the altruistic and social feelings, and that to secure right conduct in such circumstances "higher" instincts such as we have just alluded to must be evolved. This conception of the sphere of religion had, indeed, been already formulated by Mr. BENJAMIN KIDD, who suggested in his book "Social Evolution" that the function of religion is to provide a system of sanctions adequate to supply motives which will keep the lower orders of society—who possess less worldly advantages than their social superiors—from continual attempts to upset the established order of things, and which will persuade them to take their humbler place in the community contentedly. This object is brought about by the belief in a future state of rewards and punishments which will compensate the inequalities met with on earth. It is clear that this explanation, however satisfactory to the scientific mind and however well it harmonises with the evolutionary theory, will not commend itself as adequate to the religious temperament. To this temperament an attempt to account for the existence of the religious idea on any other basis than that of the objective reality of its central figures, and the truth of the dogmas which it sets forth regarding them, will appear not only futile but even blasphemous. Mr. GARROD meets this difficulty by assuming that the gradual evolution of the religious idea has consisted in an increase of the ability of the developing human mind to grasp and to appreciate the existence of certain immutable laws, while conceiving the existence of a superhuman author of these laws. He shows that the utilitarian principle of pleasure as the object of all action is untenable, at least in the form in which the great apostles of this creed enunciated it, and he assumes, therefore, that no alternative is left but to adopt the teaching of the intuitive school which demands the existence of eternal principles of conduct. Here, it may be suggested, he obviously departs from the purely evolutionary point of view which professes itself able to explain the existence of such human faculties as conscience and religion without reference to matters pertaining to what G. H. LEWES called the "metempirical" sphere.

It does not fall within our province to discuss these rival points of view at all exhaustively. Rather may we call attention to a striking modern instance of the pre-eminent importance of a vigorous religious principle as a political asset. The rise of the Japanese nation to its present position among the peoples of the world has been the most astonishing fact in recent history. The Japanese have won this high position not only by the courage of their soldiers in the field but also by the example of sturdy patriotism set by the whole population throughout the war. These qualities have been fostered, so far as outsiders can judge, mainly by the great religious principle to which the whole Japanese people subscribes, the principle of subordinating self to country. Amid the several religious systems which have established themselves in Japan—Shinto, Buddhist, and Christian—this principle of patriotism flourishes as the basis of morality and religious feeling. Its unifying force has been made manifest in recent events, and in the struggle for existence among nations one which possesses this all-powerful sentiment of cohesion must come into the arena as an almost invincible combatant. This is a biological deduction rather than a political dogma.

Should Varicocele be a Bar to Admission to the Services?

VARICOCELE has received more attention than it deserves. A slight dilatation of the veins of the pampiniform plexus is very common and by some it has been thought that varicocele is really physiological and associated with a quiescent state of the testis. Be this how it may, it appears to be certain that in some animals, such as the ram, the spermatic veins undergo dilatation and become tortuous during the time when the testes are inactive but become smaller during the rutting season when the glands are in full activity. It is difficult, however, to admit entirely the physiological nature of varicocele in the human being because it manifests itself almost exclusively on the left side of the body, and if it were physiological in origin we should expect it to be bilateral. In any case, the frequency of occurrence of varicocele would seem to suggest that it is a lesion of small importance were it not that an artificial importance has been given to the condition by the refusal of the regulations to admit into the navy, the army, or the police anyone suffering from, or perhaps we had better say affected with, this condition. If we decline to admit the physiological explanation of varicocele we must acknowledge that no satisfactory theory of its occurrence has been advanced. Not, indeed, that there is any want of theories to be found in the text-books and the candidates at examinations in surgery can glibly explain the reasons why the varicocele affects the left side rather than the right. One answer is that the left testis hangs lower, and therefore the greater length of the left spermatic vein accounts for the greater frequency with which the left side is affected, as if an extra three-quarters of an inch would make so much difference. Should this explanation not prove sufficient another is forthcoming: the left spermatic vein enters the left renal vein at a right angle, while the right spermatic vein empties itself into the inferior vena cava at a very acute angle. A slight knowledge of hydraulics should serve to discredit this theory. A more probable explanation is to be found in the influence of a loaded sigmoid flexure in retarding the return of blood from the

left spermatic vein. Some surgeons ascribe a varicocele to an over-use of the testis, while others, as we have seen, are equally ready to attribute it to an inactive state of the gland.

The etiology of varicocele is unquestionably somewhat obscure and almost as much doubt seems to exist as to the consequences of this condition. Certain disgraceful pamphlets issued by quacks attribute to varicocele many and dire results, such as, for instance, atrophy of the testis and loss of sexual power. The fear of these consequences is responsible for much anxiety on the part of young men but evidence is entirely wanting as to the possibility of varicocele by itself ever causing impotence. Some fibrosis of the testis has been described as a result of varicoceles but even if this testicular fibrosis does occur it is more than doubtful whether it ever leads to atrophy. The symptoms produced by varicocele vary greatly. In the vast majority of cases there are no symptoms and the patient, if he deserves to be so called, is completely unaware of the existence of the varicocele until he is told of it. It is true that some do complain of a dull aching or "dragging" pain and a few, a very few, complain that an intense feeling of weight or sometimes an acute pain is present. These cases, however, are exceptional and it is difficult to feel certain that the pain is directly due to the dilated spermatic vein, for the degree of the pain bears no sort of relation to the size of the varicocele, some of the smallest varicoceles giving rise to the loudest complaints.

As we have already mentioned, the regulations both of the navy and the army refuse to pass anyone suffering from a varicocele. The navy rejects cases off-hand but in the army "a slight defect if successfully cured by operation is not a disqualification." The question whether this decision to consider varicocele a bar to admission to the service is reasonable was recently raised in the columns of THE LANCET by Colonel FRANCIS HOWARD, A.M.S.,[1] and his letter has led to a very interesting discussion in which all points of view of the subject were represented. As we pointed out in an annotation a few years ago, the real reason for rejecting recruits with varicocele is the fear that the possession of a definite palpable lesion may lead to malingering. Sir THOMAS CRAWFORD in the Army Medical Report for 1862 wrote the following words in connexion with varicocele: "With a view of determining the extent to which lesions in the genital organs are disqualifications in a soldier it may be well to premise that it has been generally held by army surgeons that recruits having any disability which can by any possibility interfere with the free motion of the body or extremities or which may give colour to the alleged existence of pain should be rejected. This well-grounded opinion rests on the accumulated experience of the department and is supported by the fact that indifferent characters having such disabilities never fail to allege their existence either as an excuse for the non-performance of duty or for the avoidance of punishment. So long as a soldier can demonstrate the existence of a disease in any organ, so long will it be impracticable to punish him for malingering to avoid his duty on the one hand, or the penalty of his offences on the other. It is this contingent circumstance and not any well-grounded belief in the disqualifying nature of many alleged disabilitie which leads to the rejection of recruits for blemishes which in no way affect the efficiency of a willing soldier." This quotation sets forth clearly the official view and for it there is much to be said. The danger of malingering is real but in connexion with varicocele it is by no means great. Most army surgeons will agree that though many men have varicocele it is very seldom that it is brought forward as a reason for excuse from duty. If, therefore, we must come to the conclusion that cases of varicocele practically never interfere with the performance of his duties by a soldier, can it be right to reject 99 suitable men in order to avoid the risk of admitting a possible malingerer in the one hundredth man? And here there is a very definite difference between the officer and the private. The officer can resign at any time and therefore malingering is much less likely in his case, while the private might possibly malinger in order to be invalided out of the army. It is clear, therefore, that there can be no good reason for refusing to pass a candidate for a commission merely because he has a varicocele. If, however, we come to this conclusion, what can be said of the official advice to have an operation performed? Some well-known surgeons, Mr. HARRISON CRIPPS for instance, consider the operation useless and undesirable and refuse to allow it to be done in their wards. When we consider the results of the operation the unwisdom of insisting on its performance becomes even more obvious. Atrophy and sloughing of the testicle have many times been seen and though it may be urged that injury to the spermatic artery or to the nerves of the cord may be the cause of these unfortunate results, yet they have occurred even in the practice of experienced surgeons. What shall we say then as to the practice of insisting on an operation with such possible consequences before admitting to the army an officer in every way fitted for the position that he wishes to occupy, though affected with a condition which can in no possible way interfere with the due performance of his duties? Reasonable care we in no wise deprecate but it is surely unwise to interpose unnecessary hindrances to the admission to the army of candidates who are likely to be a credit to it. We think therefore that the authorities will do well by making an alteration in this regulation so that a mere varicocele may not be the means of keeping out of the services men who are otherwise desirable.

[1] THE LANCET, Sept 23rd, 1905, p. 923.

Annotations.

"Ne quid nimis."

THE CLEANSING OF VERMINOUS PERSONS.

IN the more squalid districts of our large towns the methods of dealing effectively with contagious verminous conditions are a constant problem to those who live and work among the very poor. The case of the children who suffer in this way is made prominent by their compulsory aggregation, both clean and unclean, in the public elementary schools, a fact which in some notorious districts gives great offence to the cleanly instincts both of the teachers and of the parents of the properly kept scholars. It may be noted that in the similar public schools of Berlin, Copenhagen, and Christiania the children are washed or bathed

weekly. The adult offenders are more difficult to deal with. Among these forlorn citizens are numbered the army of "the great unwashed" who so often appear to prefer the gospel of soup to the gospel of soap; these are men and women who having sunk their identity in the submerged tenth frequent casual wards, free shelters, or the cheap "doss-houses" provided for the homeless poor. In the olden days these would have been diagnosed as suffering from *morbus errorum*. There are many recognised and unrecognised channels of contagion by which verminous disorders are spread; thus by casual personal contact and by the use of public conveyances and conveniences, by wearing cheap second-hand clothing, notably unwashed shirts, by the contact of the promiscuous bundles of clothes which many of the poor deposit regularly on Mondays with the pawnbroker, and occasionally by association with mangy dogs. Further, the ill-clad poor are very loth unduly, as they think, to change the underlinen of their young children, a fact which goes far to explain the rapid spread of such fevers as present an early rash upon the surface of the body of the patient rather than upon his face and extremities. To the London County Council is due the credit of devising means whereby these loathsome conditions may be mitigated, if not altogether abolished. It was at the instigation of that body that the Cleansing of Persons Act, 1897, was passed. This measure gave the option to local sanitary authorities of providing accommodation, apart from the operation of the Poor-law, for the cleansing of the bodies and the clothing of verminous persons. The Act has not been widely adopted, for, unfortunately, the persons most concerned congregate in a few comparatively poor boroughs only and the augmented local expense which would follow, if action were taken, usually has been considered intolerable. As a matter of fact, among metropolitan boroughs Marylebone, St. Pancras, and Hackney have provided such means of purification; Shoreditch and Stepney have declined to grant similar facilities. With reference to uncleanly school children, complaints as to their verminous condition usually at first come from a teacher; a school nurse then examines the child suspected and if necessary she calls at the home and reports the case to the visiting medical officer, who in turn has power to exclude the child from the school until such time as he presents himself in a cleanly condition. If as the result of this provisional exclusion order the child absents himself from school the attendance officer will report this fact to his "B" committee of managers and in due course the responsible parent will be dealt with by the justices summarily as a defaulter for not sending the child to school—in fact, in these cases double fines are sometimes levied. In the meantime the head teacher not uncommonly has been soundly abused, in word and even in deed, by the irate mother of the child in default. The great fallacy of all compulsory cleansing of persons and clothing lay in the fact that there was no power to strike at the root and to eradicate the continuing source of infection—that is, the condition of the dirty home and bedclothing. The London County Council, however, in its General Powers Act, 1905, has amended the defect in practice and now a medical officer of health, after making a personal visit and receiving the sanction of his local sanitary authority, may cleanse verminous rooms and bake or destroy bedding and clothes which he finds infested with vermin. Already several borough councils in London have made use of these desirable provisions.

METROPOLITAN HOSPITAL SUNDAY FUND.

THE annual general meeting of the constituents of this Fund will take place at the Mansion House on Monday, Dec. 18th, at 3 o'clock in the afternoon, the Right Hon. Walter Vaughan Morgan, Lord Mayor, President and Treasurer, in the chair. The business of the meeting is: (1) to receive the report of the council for the year 1905; (2) to elect the council for the year 1906; (3) to determine the date of next Hospital Sunday; (4) to transact annual general business. To approve the following resolutions:—

(*a*) That the committee of distribution should have power to set aside a certain amount for the purpose of grants to district nursing associations, employing fully trained hospital nurses, and that it be a recommendation to the constituents to alter the laws of the constitution accordingly.

(*b*) That any sum set aside by the distribution committee for grants to nursing associations shall not exceed 5 per cent. of the sum collected in any year.

Considering the importance of these resolutions it is hoped that there will be a large attendance.

THE PARIS BUREAU OF INFORMATION.

THE Municipal Bureau of Information installed at the Paris Sorbonne has with very slender means rendered great services. This office was officially inaugurated in February, 1904, and occupies a large room at the end of the Galerie des Sciences to the left on entering the new portion of the Sorbonne from the Rue des Écoles. Here every sort of information relating to education, but especially medical education, is kept in such a manner as to be available at a moment's notice. All lecturers, teachers, and chiefs of cliniques are communicated with, so that they may keep the bureau well informed as to their programme or any alterations. Some 5000 catalogue cards stored alphabetically, according to the subjects treated, give the addresses and telephone numbers of lecturers, professors, and others. Then there are the hours of lectures and cliniques in hospitals or elsewhere, the hours for the opening of public institutions and hospitals, programme of the courses, and so on. Further, and in separate portfolios, each devoted to a different nationality, the foreign inquirer will find the address of his ambassador, of his consul, and of any society that his fellow countrymen may have founded in Paris, as well as the days and meeting places where the members of the last gather together. The Bureau is open from 10 A.M. till noon and from 2 to 5 P.M. every day except holidays. Some 500 persons availed themselves of the Bureau from October, 1903, up to the end of the year—that is, before its official inauguration. This institution owes its existence to the initiative and active organising work of Dr. Raoul Blondel who succeeded in convincing all whom it might concern that many learned foreigners and students visited Paris and failed to find the classes, the lectures, the laboratories or hospitals that especially interested them. At Vienna or at Berlin the centres of study are easily discovered but not so at Paris, where the different services are too scattered. Now it is no longer necessary to seek information in various directions and to trouble friends with questions which they are generally unable to answer. All the information is concentrated in one single office, where a secretary, a clerk, and an interpreter have by this time acquired expert knowledge in regard to the sort of questions likely to be put by French provincials or foreigners. Dr. Blondel has been personally to the leading Austrian and German universities and to the "University Examination Hall" at London. At all these institutions he explained the organisation of the Paris Information Bureau and left posters that might be exhibited for the advantage of the professors and students. There has consequently been a far greater number of persons lately who have availed themselves of the Bureau. In January, 1904, there were 325 visitors and the number rapidly increased till it reached the maximum of 1281 in November, the total for the whole year being 8125. Of all these persons who came in quest of information 45 per cent. were French and 55 per cent. were foreigners. Of the foreigners the Americans and the British constituted nearly

half—namely, 25 per cent. of the whole. 5 per cent. were Germans; 10 per cent. were Russians and Scandinavians; 10 per cent. were Italians, Spanish, Portuguese, and South Americans; 4 per cent. were Roumanians, Serbs, and Bulgarians; and 1 per cent. were Greeks, Turks, Japanese, and Haitiens. By far the greater number of these persons were students of both sexes and after them in order of their numbers came professors, medical men, engineers, men of letters, lawyers and barristers, archæologists, artists, and journalists. Some of the professors of the Sorbonne itself found it useful to consult the great store of practical information which has been accumulated. Dr. Blondel, in his official report of the working of the Bureau, somewhat woefully relates the odd experiences to which such an institution is exposed. Thus it often happens that a bevy of young ladies accompanied by their mother will enter the office and at once monopolise all the vacant chairs. Then they will ask numerous and minute questions and it soon becomes evident that they have not made up their minds to follow any particular line of study but are striving, on the contrary, to get information that will enable them to come to a conclusion in the choice of a career. Of the specialties about which the greatest number of questions are asked are those that relate to diseases of the eye, dermatology, nervous diseases, and gynæcology. It is found also that most of the foreigners are not particularly anxious to attend gratuitous classes but are, on the contrary, quite willing to pay. They complain, however, and very bitterly, that most of these courses extend over a period of at least six months. They often cannot afford to remain in Paris for such a long time. At Berlin, at Vienna, and elsewhere there are courses held with the lectures following each other in rapid succession, and these are consequently terminated within the limits of a much shorter visit to those capitals. Professor Budin, at the Tarnier gynæcological clinique, and Professor Lapersonne, at the ophthalmological clinique of the Hôtel Dieu, have organised something of this sort but they are notable exceptions to the general rule. The most surprising thing about this institution is that though it does so much and such useful work it nevertheless possesses only very slender resources. Thus the director-general of the entire establishment enjoys the munificent salary of £4 per annum. Evidently this was a magnanimous attempt to pay his cab fares. The chief secretary, who has to be there all the time during which the Bureau is open and therefore cannot well attend to any other business, receives £60 a year. The clerk and the interpreter only receive £48 each, which, with the dearness of provisions in Paris, does not seem to be a living wage. It is to be hoped that in the course of time, as the merits of the Bureau become still more widely known and appreciated, something will be done to improve the position of those who are rendering great service annually to many thousand visitors coming from all parts of the world.

BARBERS AND SURGEONS.

AT the hall of the ancient City Guild of Barbers an interesting event occurred on Dec. 5th. From the earliest times both in England and on the continent the art of the barber walked, so to speak, hand in hand with that of the surgeon, whilst as evidencing the antiquity of the London Guild of Barber-Surgeons they have preserved a list of their Masters from the year 1308. This union was dissolved by Act of Parliament in 1745, thenceforth the Barbers' Company retaining the old hall in Monkwell-street, where it had been situate since the days of Richard II., together with the corporate property, records, plate, and pictures, whilst the surgeons were created a separate company out of which grew the Royal College of Surgeons of England, and all connexion between the two bodies absolutely ceased. On Dec. 5th, however, the old association was renewed in a most pleasant manner at a Court of Assistants of the Barbers' Company, when Mr. John Tweedy, the President of the Royal College of Surgeons, was admitted to the freedom and livery of the Company and may thus be truly said to have become a "barber-surgeon." The charming old hall in which this ceremony took place was designed by Inigo Jones in 1636 and fortunately escaped the great fire of 1666, its walls being still adorned with many valuable and historic pictures the works of Vandyke, Sir Peter Lely, Sir Joshua Reynolds, Gainsborough, and others, whilst to crown all is the world-renowned picture by Holbein representing Henry VIII. presenting a charter to the barber-surgeons. Nor has the Company been less fortunate in the preservation of some choice old plate, notably the Tudor Grace cup and cover (plate mark 1519) presented by Henry VIII., the Royal Oak cup presented by Charles II. in commemoration of his escape at Boscobel, a large silver punch bowl presented by Queen Anne, and numerous other fine specimens of old silver. Surrounded by these delightful reminiscences of the past the President was entertained at a banquet in the evening, and in responding to the toast of the "Junior Liveryman" spoke with pride and pleasure of his association with the guild and the hall which had once been the home of so many of his illustrious predecessors.

TRAUMATIC ULCER OF THE STOMACH.

A CASE of very considerable interest is recorded by Dr. Fertig of Cassel in the *Münchener Medicinische Wochenschrift* of Sept. 12th. The patient was a man, aged 28 years, who half an hour after a heavy breakfast received a kick in the middle of the abdomen. He was unconscious for a quarter of an hour, at the end of which he complained of abdominal pain and difficulty in breathing. There was no vomiting but frequent retching. On examination he was found to be cyanotic and breathing with difficulty. The abdomen was slightly distended, tender, and very rigid. The percussion note was tympanitic everywhere except in the flanks. A perforation of the gut or an internal hæmorrhage was suspected and an exploratory laparotomy was therefore carried out two and a half hours after the injury but with negative results, the only condition found being a small quantity of blood in the region of the gastro-hepatic ligament. Two days after the operation a considerable degree of meteorism developed associated with vomiting; otherwise the patient was comfortable with a full and strong pulse. The vomit was red in colour but this was attributed to some red wine which he had been given a short time previously. The bowels were relieved and the fæces were free from blood. On the evening of the fourth day the patient vomited blood and became very collapsed and pale. Next day the hæmatemesis persisted and the anæmia became more marked. On washing out the stomach a large quantity of blood and blood clot was removed. The diagnosis of traumatic ulcer of the stomach was then made but the desperate condition of the patient was held to render further operation inadvisable. Nothing but ice was given by the mouth, large quantities of normal saline solution were infused, and ergotin was administered hypodermically, but without avail; the vomiting persisted, blood appeared in large quantity in the stools, and death occurred during the night. At the necropsy there was no peritonitis and, apart from the conditions found in the stomach, there was no sign of injury. The stomach contained a large cake of blood clot and along the lesser curvatures of the organ there were four ulcers, one behind the other. Three of them were of rounded form, with a diameter of from a half to one centimetre; the fourth, which was nearest the pylorus being about five centimetres from it, was of oval form, three

centimetres long and two broad. The ulcers showed sharply defined, overhanging edges and involved the whole thickness of the stomach walls but were shut off from the peritoneal cavity by the gastro-hepatic omentum. In the floor of the largest ulcer the right coronary artery, which was eroded, projected and from this the hæmorrhage had occurred. Dr. Fertig discusses the pathogenesis of traumatic ulceration of the stomach, with interesting references to other recorded cases and to experimental researches. He states that the diagnosis is not infrequently made but that it is but rarely established by operation or necropsy, since Jäckh[1] could only collect eight cases from the literature. The forms of injury which have produced ulceration in these cases include kicks, blows with the fist, falling against the corner of a table, compression between railway buffers, and fall from a height. Dr. Fertig explains the ulceration in the case under his care as follows. At the time of the injury the patient, who had not previously suffered from any gastric disease, was digesting a full meal, the distended stomach was forcibly driven against the vertebral column, and some tears in the mucous membrane resulted. The stomach at the time or shortly after would be at its maximum acidity, and hyperacidity, it is believed, is a factor of importance in the genesis of gastric ulceration. Certain experiments of Vanni suggest that there is also a mycotic factor in the production of gastric ulcers, so that it may possibly be that the trauma of the gastric mucous membrane afforded the opportunity for a bacterial infection. Other investigations also seem to indicate that the lesser curvature is the most frequent site of lesion in the stomach when abdominal injuries are received after a full meal. Dr. Fertig's case is noteworthy not only for the clearness with which the diagnosis is established but also for the succinct and careful manner in which it is recorded and the critical nature of Dr. Fertig's discussion of it.

THE ESSENTIAL CONDITIONS OF STEAM DISINFECTION.

A VERY instructive and interesting correspondence on the important subject of disinfection by steam has recently appeared in our columns. We are compelled now on considerations of space to close this correspondence and we venture to think at the same time that sufficient discussion has been brought before our readers to guide them as to what in practice ought to be regarded as the essential conditions of steam disinfection. The correspondence practically resolved itself into considering the relative merits of streaming steam on the one hand and on the other of saturated steam under pressure for practical disinfecting purposes. The latter, as might be anticipated from its more powerful mechanical and physical properties, is undoubtedly the most certain agent for the purpose, although streaming steam admits of a much simpler application and for many if not all practical requirements the prolonged exposure of infected articles to a rapid stream of current steam, especially if that steam is kept a few degrees above condensation point, secures disinfection if we are to accept the results of bacteriological experiments made with typical organisms. The condition of efficiency, however, when using streaming steam is the rate at which the steam is generated and the steam velocity in this method is admittedly difficult to control. On the other hand, the use of saturated steam under pressure necessarily supplies a constant and efficient condition which is easy and simple enough to insure. As is well known, it is essential when using steam for the purposes of disinfection to expel the air from the apparatus, as air, being a poor conductor of heat, tends to insulate the material to be disinfected and to prevent the steam from coming into direct contact with it. That system, therefore, which effectually expels all air is the one in which confidence would be naturally placed. At any rate, in practice it has been established that steam under pressure acts more rapidly and more searchingly than streaming steam at 100° C., partly no doubt because the former method more effectually expels non-conducting air and partly because it is more likely to break up greasy envelopes. With exceptionally resistant spores the time taken by saturated steam to sterilise organisms is found to be much shorter than when streaming steam is used. It should be added, however, that if prior to the introduction of current steam a vacuum or a partial vacuum is produced in the apparatus the penetrative power of the team is increased, and concurrently a more rapid and powerful disinfecting action is obtained. There seems to be no reason therefore why, under certain conditions, the two systems should not be made equally effectual.

[1] Langenbeck's Archiv, Band lxvi., p. 935.

THE EXETER DISPENSARY.

IN our issue of Dec. 9th a paragraph appeared from our Western Counties Correspondent mentioning that the honorary medical staff of the Exeter Dispensary had resigned. We have now received from the medical staff a letter and some documents as to the origin of the dispute which has led to the resignation. Besides (1) the letter from the staff to ourselves we have before us (2) a letter from the staff to the governors of the dispensary, and (3) a copy of a letter addressed by the committee of the dispensary to the governors. The letter from the staff to ourselves sums up matters as follows:—

> 1. After a charge of unpunctuality and neglect of duty had been preferred against the honorary medical officers no opportunity was given them to answer the accusations but the matter was referred to a subcommittee.
> 2. Charges were made against them in the subcommittee based upon statistics showing a complete ignorance of the conditions under which medical work has to be carried out, implying neglect and supported by language of a most offensive character. No attempt was made by the president or by members of the subcommittee, with one exception, to protest against the accusation or the language in which it was couched. It was shown by the two members of the staff present that the statistics were inaccurate and the deductions false but the member making them declared his intention of publishing them if defeated in committee.

The course of events which have led up to the members of the medical staff tendering their resignations can be gathered from (2) the letter which has been addressed to the governors of the dispensary by the medical staff. It appears by the minutes of the last court of governors, held on Feb. 15th, that it was unanimously resolved:—

> That the best thanks of this meeting be given to the medical officers for their zealous, kind, and unremitting attention to the patients of this charity, whereby the poor and suffering classes of society have been so inexpensively relieved.

On Nov. 15th, however, Mr. Knill, a governor, brought a proposal before the committee to consider the desirability of engaging a permanent medical officer to be in daily attendance, so as to relieve the honorary medical staff of part of their onerous duties, and to secure more speedy attention to the patients. This proposal was supported by statistics gravely impugning the efficiency of the medical attendance. Instead, as has hitherto been the custom in any matter referring to the medical staff, of submitting this proposal to the medical staff for consideration, it was referred to a subcommittee the members of which were nominated by Mr. Knill. The medical staff hearing of this wrote to the chairman of the subcommittee, pointing out that in their opinion the appointment of a paid medical officer would not be desirable and would not obviate the delays complained of. This letter was read at the meeting of the subcommittee on Nov. 23rd, to every member of which Mr. Knill had sent a statement embodying the charges which he had made on Nov. 15th, but, as we learn from (2), the letter from the staff to the governors, the statement was shown by the medical members of the subcommittee to be inaccurate. The refutation printed in pamphlet form was sent to the governors

on Dec. 11th. The subcommittee eventually decided to refer the matter to the medical staff for consideration and report. Before the medical staff could send in their report articles appeared in various local papers of a nature hostile to the medical officers. The whole of the medical staff, therefore, with the exception of Dr. Augustus Drake, the consulting physician, then tendered their resignations, to take effect on Dec. 21st. The resignations were considered at a meeting of the governors held on Dec. 13th and at this meeting a motion was carried as follows:—

That the Governors of the Exeter Dispensary regret the attacks that have been made upon the medical officers by certain members of the committee and desire to express their appreciation of the zeal and ability with which the medical officers have discharged their duties and their entire confidence in them, and, being of opinion that the appointment of a paid medical officer is unnecessary and inexpedient, trust that the medical officers will withdraw their resignation.

We congratulate the medical officers on this result and the governors upon the sensible view which they have taken of the matter at issue. So far as we can see from the information before us, we do not think that any discourtesy was intended by referring the question of the appointment of a paid medical officer to a subcommittee before applying to the medical staff, and the subcommittee apparently did no more than refer the matter from themselves to the medical staff. But Mr. Knill's action was mistaken, even from his own point of view, and we think that he made it very difficult for the medical staff to do aught but to resign. He was in his right to say, if he really conscientiously thought so, that the medical officers were unpunctual, but not to imply that they were so wilfully. As regards his complaints about the inadequate accommodation for patients, that, it seems to us, is not the fault of the medical staff. Moreover, we learn that so long ago as 1895 the medical staff pointed out the insufficiency of the waiting-room accommodation and urged that the present committee-room should be utilised for patients but the then committee "declined to comply with this suggestion." Where Mr. Knill showed a want of courtesy and also of knowledge as to how the business of a committee should be conducted was in threatening the committee that, if his proposals were not carried, he would publish his statement in the public press. Whether he personally carried out his threat or not does not appear, but any way the facts of the statement got into the press and hostile comments on the staff appeared, written by one who was apparently in possession of what had passed at the meetings of the committee. We should add that the president of the committee, in a letter which appeared in the *Devon Gazette* of Dec. 2nd, said that if the deliberations of the committee had been conveyed to the public press he considered it "a very regrettable course of action," a sentiment in which all honourable-minded people will acquiesce.

THE USE OF SLATES IN SCHOOLS.

A DEPUTATION was received at the Privy Council Office recently by Lord Londonderry, at that time President of the Board of Education, consisting of Mr. J. Bryn Roberts, M.P., Sir John Puleston, Mr. R. A. Naylor, Canon Brownrigg, Mr. Ainger Williams, Mr. T. R. Jones, and Mr. W. M. Roberts. The object of the deputation was to urge the Educational Department not to insist upon the official recommendation to local authorities that the use of slates in schools should be discouraged. In the course of speeches by members of the deputation it was stated that there was less danger of infection through using slates than through using cheap paper and pencils; that from economical considerations the advantage was in favour of slates; and that the slate industry would suffer if the policy was carried out. In his reply Lord Londonderry pointed out that the suggestions to teachers with respect to the abolition of slates were not instructions and sympathised with the commercial aspect of the question. It does not seem to us possible that slates are less likely to be the vehicles of infection than paper however cheap, and this being so the cheapness of slates becomes of no importance. Slates circulate through the hands of the pupils who breathe on them and spit on them. Where children are supplied with damp rags or sponges for the purpose of cleaning the slates they frequently do not use them, nor does the handing of such articles round a class appear to us a sanitary proceeding. We hope that the managers of council schools will not be influenced by any commercial aspect of the question. A sick child costs much more to the community than the difference in cos between paper and a slate, and the vital statistics of the country are of more importance than the dividends of quarry owners.

THE ADMISSION OF PAYING PATIENTS INTO THE METROPOLITAN ASYLUMS BOARD'S HOSPITALS.

THE question as to whether the Metropolitan Asylums Board should admit paying cases into the hospitals under its control was once again discussed at a meeting of the Board on Saturday, Dec. 9th. The question was introduced by Mr. J. T. Helby, the chairman of the hospitals committee, who moved that the Local Government Board be requested to sanction the admission of paying patients to the hospitals, asylums, and schools and homes under the control of the managers. His reasons for doing so were that during the recent epidemic the wards were very full and sometimes a well-bred child had to go into the same ward with children who had been brought up in a slum and who were in the habit of using rather foul expressions. There had also been many offers from some of their patients to make some payment but that the Board had decided to refuse. That fact alone showed that there were people using the Board's hospitals who were able to pay something which would eventually benefit the ratepayers. The Hon. Maude Stanley seconded the motion, which after some discussion was referred to the general purposes committee for consideration and report.

TUBERCULIN IN THE TREATMENT OF TUBERCULOUS IRITIS.

A NUMBER of cases in which good results have been obtained from tuberculin in ocular tuberculosis has been recorded. Indeed, Professor von Hippel states that "tuberculin rightly used will permanently heal the severest tuberculosis of the eye." In the *Journal of the American Medical Association* of Oct. 14th Dr. E. V. L. Brown has reported the following case of tuberculous iritis in which Koch's T.R. was used with success. A clerk, aged 25 years, complained of "redness of the eyes" of four months' duration which was not accompanied by much pain. He gave no personal history of syphilis or family history of tuberculosis. The left pupil was irregular, responded badly to light, and dilated irregularly under atropine, showing numerous posterior synechiæ. At the inferior part of the iris on the temporal side was a reddish growth of the size of a pin-head and nearer the pupillary border was a smaller growth. These nodules were semi-transparent and non-vascular. The iris was discoloured, its markings were indistinct, and the media were hazy. There was a slight cough and an afternoon temperature of 99·5° F. was noted. Examination of the blood showed leucopenia, the leucocytes numbering 3500, of which 8 per cent. were small mononuclears and 32 per cent. were large mononuclears. Examination of the chest was negative but there was enlargement of the left supraclavicular glands. These conditions suggested glandular tuberculosis. Iodide of potassium was given and mercurial inunction was performed.

The two nodules steadily enlarged and became greyish-opaque and three others appeared in the lower nasal quadrant, ciliary injection increased, and a fine greyish deposit developed on the lower half of the posterior surface of the cornea, indicating extension of inflammation from the adjacent iris. On Oct. 24th injections of Koch's T.R. and instillation of atropine were begun. The first injection, $\frac{1}{100}$th of a milligramme, caused no perceptible change. On the 26th the same dose was given. On the 31st $\frac{1}{10}$ths of a milligramme were injected and 24 hours later the temperature had risen to 100·6°. The ciliary injection increased and vessels stood out prominently over the largest nodule. In 12 hours this local reaction disappeared. On Nov. 5th $\frac{1}{10}$ths of a milligramme were injected and this was repeated in the evening. 24 hours later the ciliary injection was again increased and the large nodule was brick-red and remained so for several hours. After six months' treatment the nodules and the ciliary injection disappeared and the iris nearly regained its normal colour.

TOTAL NECROSIS OF THE INFERIOR MAXILLA.

IN the *Boston Medical and Surgical Journal* of Nov. 16th Dr. T. Fillebrown has published a case of a very rare condition—total necrosis of the inferior maxilla. The patient was a robust boy, aged ten years, who showed no indications of inherited syphilis. In November, 1902, the first lower right molar tooth was extracted in order to relieve an abscess but the swelling and pain only increased. Four days after the extraction he was removed to a private hospital where necrosis was diagnosed but its extent was not determined. He came under Dr. Fillebrown's care in May, 1903, when there was marked symmetrical swelling of the neck and lower part of the face. As far back as the rami the inferior maxilla was entirely denuded. A part of the mental region and a part of the alveolar process had been destroyed by caries. As the general condition was good and there was no indication of septic absorption it was thought best to wait for more complete separation of the sequestrum. On June 2nd an operation was performed. The skin of the face and neck was tense and œdematous. Within the mouth the entire body of the lower maxilla and a considerable portion of the rami were denuded. Anteriorly the mental portion of the bone had completely separated as far as the foramina on either side. The bone was completely separated on either side by means of periosteum dissectors, no sharp instruments being used. In this manner one-half of the right ramus with the sigmoid notch and coronoid process and neck of the condyle, leaving but a shell of the latter, was separated and removed. A similar operation was performed on the left side. The operation occupied 25 minutes and the hæmorrhage was slight. The subsequent treatment consisted in irrigation with antiseptic solutions. On the second day the temperature reached 100° F. and on the fourth day it regained the normal. Recovery ensued. Whether the bone will be reproduced or the jaw will continue to grow remains to be seen.

UNDERFED SCHOOL CHILDREN.

As Christmas approaches the appeals to the charitable become so numerous that much judgment has to be expended in selecting the particular institutions for individual support from among so many which present the most pressing needs. But we can advocate the claims of underfed school children to the charity of all. Whatever may be the opinion as to the wisdom or unwisdom of feeding as well as educating the pupils in our elementary schools, there can be no doubt that there are very many children who do not receive the amount of food necessary for their proper physical development and to enable them fully to avail themselves of the education provided. The needs of underfed school children should not be forgotten when Christmas donations are being considered and we cordially endorse the appeal of Sir Edwin Cornwall, the chairman of the London County Council, for contributions towards this object in the metropolis over whose municipal affairs he presides. The London County Council does nothing whatever to provide meals out of the rates or at public expense, and, as Sir Edwin Cornwall points out, "unless sufficient voluntary assistance is forthcoming a very serious condition of things must prevail in those districts where underfed children are daily to be found in the schools." There are three central organisations for collecting and distributing funds to meet the needs of underfed children—namely, the *Referee* Fund, honorary treasurer, Mrs. Burgwin, 147, Brixton-road, S.W.; the London Schools' Dinner Association, 32, John-street, Bedford-row, W.C.; and the Destitute Children's Dinner Society, honorary secretary, Mr. H. Morton Carr, 52, Lavender-gardens, Lavender-hill, S.W.—and contributions can be sent to one of these organisations by those of our readers who sympathise with their common object.

ADVERTISING AND CANVASSING BY REGISTERED MEDICAL PRACTITIONERS.

WE desire to draw the attention of our readers to an announcement by the General Medical Council which will be found in our advertising columns. From its nature the subject is of immediate personal interest only to those practitioners whose views on matters of professional ethics are lax and who require some guidance in choosing the way that they should go. These individuals, we are happy to think, form a relatively small minority of the profession. They belong to a class whose main object is purely selfish; their methods, if allowed free scope, would inevitably have a detrimental effect on the reputation of the profession in general, and the less scrupulous among them would come perilously near the reproach of charlatanism. We are therefore in complete sympathy with the efforts which the General Medical Council is making to diminish this evil; our only regret is that in such cases of what might be called exaggerated commercialism the Council if it resolves to inflict a penalty cannot avoid the incongruity of describing this misdemeanour in the same terms as the most serious offences against society or the law of the land.

THE DEADLOCK IN THE ROMAN MEDICAL SCHOOL.

THERE is never smoke without fire, and the turbulence of the students of medicine in the Roman School, proceeding to lengths which their well-wishers will be the last to justify, has its cause in conditions for which the legislature is, it seems, in the last resort, to blame. It is surely a scandal that the press of Italy should have it in its power to bring home to the Ministers of Public Works and Public Instruction such grave dereliction of duty as that described in THE LANCET of Dec. 9th by one of our Italian correspondents and supplemented as well as confirmed by the *Tribuna* of Rome. That the future members of a noble profession in whose hands the health and happiness of the community in great measure rest should, even temporarily, be deprived of much of their teaching by the chaotic state in which the chief clinical institution still remains, and that such teaching as is already available in that institution should lose much of its efficiency by the remoteness of the institution itself from the central University, involving a journey, going and coming, fraught with expense, delay, and even discomfort to the student—all this, we say, constitutes a grievance for which the sufferers are to be sympathised

with and the parties responsible to be censured. At the close of last session, we are informed, Signor Tonelli, rector of the Roman University, convened the leaders of political parties in the Chamber and in the Senate as well as the civic authorities, to impress upon them, and through them upon the legislature, the urgent necessity of proceeding energetically with the completion of the Policlinico in view of the opening of the Medicus Annus in November. But whatever impression his appeal made at the time seems quickly to have failed of effect. The works at the Policlinico were allowed to stand idle all the summer and were not resumed until within a week or two of the beginning of the winter session! Hence the confusion in the academic programme, the protests and "demonstrations" of the students, and the renewed, almost desperate, appeal of the rector and Senatus to the Government. "Rome was not built in a day"; true; but surely 35 years of existence as the capital of United Italy should have sufficed to bring her teaching equipment up to the level of her requirements and to give her students in medicine the facilities of professional qualification enjoyed by their young contemporaries at every other seat of learning in the European State system.

POISONING WITH "WEED-KILLER."

A SERVANT girl, 20 years of age, was sentenced to three years' penal servitude at the recent Kent assizes for poisoning her mistress, her mistress's two nieces, and the nurse who subsequently attended them by mixing "weed-killer" with their food. One of the ladies is still suffering from paralysis caused by the poison taken in last July. Evidence was called as to the prisoner's mental condition but apparently this was not considered by the jury to be such as to justify them in finding the girl insane. The danger shown by this case is well known and at present there seems to be no means of avoiding its recurrence. Weed-killers are not the only compounds used in agriculture which contain large quantities of arsenic or of other poisonous drugs, and which, whatever precautions may be used at the time of their sale, often pass afterwards into the custody of ignorant and careless people. They often also become accessible to persons who, however, ignorant of the suffering that they will inflict or of the extent of the danger of their acts, possess enough knowledge and sufficient malice to endanger valuable lives. That the girl in this instance could have been capable of understanding fully the effect of what she did is difficult to believe. The danger of leaving arsenical compounds where they can tempt such beings to crime is one to which attention should be forcibly directed.

THE BIO-CHEMICAL STANDARDISATION OF DIGITALIS, SQUILL, AND STROPHANTHUS.

Professor W. E. Dixon and Mr. G. S. Haynes communicated a paper to the Therapeutical Society on Nov. 28th on the Bio-chemical Standardisation of Members of the Digitalis Group of Drugs.[1] The activity of this group can be determined with absolute precision. These drugs attack cardiac muscle and when they are present to a certain amount the heart enters into rigor and dies. The method of standardisation consists in determining the minimal lethal dose. Professor Dixon and Mr. Haynes obtained freshly made official tinctures of digitalis, squill, and strophanthus and took them as standards with which to compare various tinctures of these drugs which were purchased in Cambridge. The purchased tinctures varied considerably in their activity but were never so toxic as the standard tinctures. The worst tincture of digitalis examined was only about one-third as strong as the standard tincture; a tincture of squill was only half the strength, and a tincture of strophanthus was only about a tenth of the strength of the standard tincture. Professor Dixon said that the standard tinctures of digitalis and squill were about equally toxic, whilst the standard tincture of strophanthus was about ten times as toxic as either. These results were verified on mammalian hearts, and the effects were as evident when the drug was taken by the mouth as when it was injected. It is obvious, therefore, that the official dose, 5 to 15 minims, is too high. Professor Dixon suggests ½ to 5 minims as a suitable dose. The variation in strength of the tinctures examined by Professor Dixon and Mr. Haynes may be due to the use of inferior drugs or to deterioration owing to age. They suggested that every pharmacist should prepare his own galenical preparations, in reasonably small quantities, at not too long intervals. The pharmacist then would know the age of his galenicals and would be satisfied that the drugs employed were the best of their kind.

[1] Pharmaceutical Journal, Dec. 2nd, 1905, p. 754. Compare THE LANCET, August 12th, 1905, p. 477.

WHAT IS WHISKY?

AT the North London police court, on Wednesday last, the case for the prosecution closed after the evidence of the chief witness, Dr. William Murrell, had been given. He stated that in medical practice he regarded pure alcohol as useless in many cases and equally so patent or silent spirit. In prescribing, only pot-still spirit, he said, would be understood to be whisky. At the next hearing counsel for the defence will make his opening statement.

SCHOOL HYGIENE.

IN our issue of Dec. 9th we commented upon some very practical "Notes on Hygiene for Teachers" which had been issued by the Manchester education committee. We have now before us the annual report of the education committee for 1904–05, from which we see that the subject of hygiene, using the word in a wide sense, forms no small part of the instruction given to both teachers and taught in Manchester. The total number of scholars on the books up to Sept. 30th, 1905, was 111,536, and the total number of teachers, excluding pupil teachers and special teachers, was 2716. As regards the vision of children, all children in and above Standard II. have been tested and the test is to be repeated every two years. The total number of children tested during the year under review was 32,486, of whom 2126 were suffering from visual defects of such gravity that the parents were advised by circular to obtain medical advice. In connexion with this point we see that many of the parents availed themselves of the education committee's scheme for aiding those unable to pay for glasses to obtain spectacles for their children. As to defective hearing 316 cases were reported and in 119 cases the parents were advised of the fact. Girls in Standards V., VI., and VII. are taught cookery and, we understand, are also instructed in elementary hygiene and in the nursing and feeding of babies and the like by a highly trained nurse. Teachers are trained in physical exercises, 2067 in all having been so trained. During the winter months courses of three addresses on infectious diseases, eyesight, hearing, and the general hygiene of schools were given to the teachers in the elementary schools. Attendance was voluntary but 1200 tickets for the courses were issued. With regard to the question of badly nourished children, the medical officer has made an exhaustive inquiry dealing with over 10,000 children and a full report with statistics had been handed to the Director of Elementary Education for submission to the Government. The education committee has arranged a country school to which children are sent in batches of about 80. At this school modified ordinary school work is carried

on, together with open-air pursuits and gardening. This plan strikes us as excellent and as one which might be followed with advantage by other large towns, although we suppose that it would be difficult in the case of London. Altogether, although it is not claimed that every child is under direct medical supervision, the Manchester education committee is evidently doing its best to secure at any rate modified medical supervision of all the children with whose education the committee is intrusted and at present this seems to be the only feasible plan.

THE Richard Middlemore Post-graduate Lecture for 1905 will be delivered at the Birmingham and Midland Eye Hospital on Tuesday next, Dec. 19th, at 5 P.M., by Mr. Henry Eales, senior surgeon to the hospital. Mr. Eales has taken as his subject Some Affections of the Eye and its Surroundings caused by Nasal Disease.

Professor Robert Koch has been awarded the Nobel Prize for medicine for the year on account of his works and discoveries in connexion with tuberculosis.

THE medical officer of health of the Cape Colony states that during the week ending Nov. 18th only one case of plague occurred.

SANATORIUMS FOR THE WORKERS: THEIR NEED AND UTILITY.

BY CHARLES H. GARLAND,
CHAIRMAN OF THE NATIONAL ASSOCIATION FOR THE ERECTION AND MAINTENANCE OF SANATORIA FOR WORKERS SUFFERING FROM TUBERCULOSIS.

IN an exceedingly interesting paper read at the recent Congress on Tuberculosis held in Paris Dr. Romme of that city produced a mass of convincing evidence drawn from several countries, that "tuberculosis is the direct outcome of the economic conditions of the individual." It may, indeed, be called an industrial disease. Sir William Broadbent has called it a "poor man's disease" and says that there is no need why a well-to-do man should ever contract it save for the infection derived from the poor. Dr. Romme showed that the incidence of the disease, or the frequency of its occurrence, was always in inverse ratio to the incomes of the classes which it attacks. In other words, the poorer one is the more likely one is to contract tuberculosis. The most potent factors in the production of the disease are the conditions that are associated with poverty and with the modern industrial system. Long hours, small wages, poor food, unemployment, bad housing, and all the other things that are symptomatic of poverty were shown to have a direct relation with the disease. These things are the constituents of the enviroment of our working-class population. The statistics of the disease in our own country are eloquent of the same things. Indeed, we need go no farther than our own city of London to find ample corroboration of the conclusions of the French *savant*. In London from 7000 to 8000 persons die annually from consumption and it has been estimated that at the present moment 80,000 Londoners are suffering from some form of tuberculosis. To this huge sum of suffering and death the working classes make the heaviest contributions. It is just in those districts where the working classes reside that the mortality is heaviest. Stepney's death-rate from the disease (2·4 per 1000) is double that of Paddington (1·2 per 1000). There is also another loss. Not only does tuberculosis rob the worker of his life but while he is yet alive it robs him of his wages. It is a long, lingering, and exhausting disease, and it has been estimated that the working classes of London lose £4,000,000 annually in wages from this cause. In Liverpool Dr. Nathan Raw says the loss is £300,000 per year. Think what misery and suffering this loss must bring in its train.

In combating this dread "white plague" prevention must be our first consideration. The worker who has been "cured" is never quite so strong as the man who has never had the disease. But until prevention is perfect we have the sufferers with us. They must be treated. Among the methods of treatment the sanatorium takes first place. The hygienic treatment or sanatorium treatment is no patent cure-all miracle-worker, nor is it a quack medicine. It is merely a careful application of the best natural conditions, a solicitation, as it were, to Nature herself to cure the sufferer. Professor Grancher defines it as double rations of food and rest and half rations of work. It is, as Dr. Arthur Latham so aptly calls it, "a method of sending the patient to school and teaching him how to live in his new condition of health." By this treatment the best results have been obtained in the past; it is the basis of all other treatments, and from it the best results are to be hoped in the future. The latest returns of the Swiss sanatoriums, for example, show that of patients treated in the first stages of the disease 77·9 per cent. retain their full capacity for work at the end of five years from the time of their discharge. Taking all stages together there are 52·9 per cent. in full possession of their working capacity at the end of five years.[1] No other treatment can show results in the least approximating to these. As Sir James Crichton-Browne says: "It cannot be too loudly proclaimed, too widely known, that the sanatorium treatment has already largely extended the curability of consumption, and that in suitable cases it holds out hopes of recovery and prolongation of life that could never have been entertained before its introduction." In addition to its value as a curative agent it has a very important position as an educational and a preventive agent. At a sanatorium the patient learns how to live healthily. He learns what habits to avoid and what to cultivate and he takes those lessons and their results to his home and spreads the knowledge to those among whom he lives. This result of the sanatorium treatment is, if looked at from the point of view of the society, almost as important as its curative value. It is obviously our duty, then, if we wish to remove from our midst this terrible scourge that is robbing us of our population at the best and most valuable period of their lives to see that the sanatorium treatment is at the disposal of the sufferers. And inasmuch as its success depends so largely on early treatment there must be accommodation always at hand for the immediate assistance of the afflicted.

What is now the case? For the rich man who suffers least, but who is able to pay four or five guineas weekly for his cure, there is accommodation and to spare. In fact, some of the expensive sanatoriums cannot fill their beds. But for the poor man without means or the man of limited means there is practically no hope of early treatment. The secretary of the Hospital Saturday Fund tells me a harrowing tale on this head. A very large number of cases apply to the Fund for relief and assistance and their names are entered in turn for admission to a suitable institution. But the waits extend over 12, 15, or even 20 weeks, and when a vacancy does at length occur the disease is too far advanced for permanent arrest or in some cases the patient is dead. From all the large public institutions the same tale comes. There are hundreds waiting admission and during the lengthy waits the disease very often, alas, passes beyond the hope of permanent amelioration. My inquiries convince me that many of the cases that do obtain accommodation are failures because of the late stage at which they obtain admission. So the worker is deprived of the benefits of the best medical science merely on account of lack of means and dies from the disease of which the well-to-do man is cured.

The consideration of such facts as these was the starting point of the scheme that is being promoted by the "National Association for the Erection and Maintenance of Sanatoria for Workers Suffering from Tuberculosis." There is, of course, a large part of our population for whom provision must be made by the Poor-law authorities. The 30 per cent. of indigent poor, which Mr. Charles Booth has shown are always on the verge of starvation, cannot in any case be looked to to help themselves. But there is a very considerable section of workers, numbering, roughly, 15,000,000, who for the most part are members of the great friendly societies and trade-unions, who can by a scheme of organised self-help contribute to their own salvation. It is to this class that we are making our appeal. If we succeed the results that will emerge will doubtless do much to stimulate the Government to do its duty to the

[1] Rapport presenté au Congrès International de la Tuberculose de Paris, 1905, par le Dr. H. Carrière au nom du Bureau Sanitaire Fédéral.

poorer section. It will form a valuable object lesson in cure and prevention. It must not be supposed that the members of these societies who are the best and healthiest of the workers are immune from the disease. Nor does the medical selection of members of friendly societies exclude the disease. In the Ancient Order of Foresters, for example, consumption kills 15 out of every 100 persons who die. This represents a proportion of 1·9 per 1000 of the membership. This proportion is far higher than the proportion among the general population and illustrates the baneful influence of the industrial conditions under which the worker lives. The disease kills its victims, too, mostly before 40 years of age which is the most remunerative period of their membership of the societies to which they belong. Returns which we have obtained from the Foresters show that a consumptive invalid costs the society £14 more than other invalids, and returns on the same lines from the Hearts of Oak Benefit Society show that the consumptive costs 17 guineas in excess of the other invalids. The returns of certain French friendly societies, too, show that from 25 to 34 per cent. of the total disbursements of the societies are made on account of tuberculosis.[2]

These facts should appeal to the societies on the financial side as well as the philanthropic side. We believe that they will find it is cheaper to provide treatment in sanatoriums for their suffering members than to pay out the enormous sick benefits that are now disbursed. The experience of the German workmen's insurance supports this view. For example, the latest figures of this immense State undertaking communicated to the Paris congress give the following comparative results. Two groups of invalids are compared. The first group is of 100 tuberculous invalids and the second is of 100 invalids suffering from other complaints. An examination of the saving effected by treatment at sanatoriums as indicated by the extinction of invalidity pensions or the reduction of chronic invalidity resulted as follows. Of the 100 tuberculous invalids entitled to pensions between the ages of 25 and 29 years only 17 were drawing pensions—that is to say, were still alive—at the end of a year and at the end of four years only four were still in receipt of benefit. Of the 100 non-tuberculous invalids between the ages of 25 and 29 years 69 were drawing invalidity pensions still after the lapse of 12 months. These results are very significant and hopeful.[3]

The work which the National Association has set out to do is as follows. By means of subscribed funds it is proposed to erect a sanatorium at Benenden, in Kent, where a site of 252 acres has already been acquired. This first building will be for the accommodation of 200 patients, of whom the majority (two-thirds) will be accommodated in small buildings of inexpensive construction, the whole to be on a scale which is less expensive than anything hitherto attempted, although nothing essential to efficiency will be sacrificed. The sanatorium having been erected, it is intended to be self-maintaining. Maintenance funds will be provided by the endowment of beds by the affiliated friendly societies and trade-unions. Already many guarantees have been received which justify us in commencing building operations in the coming spring. The cost of beds will be about £65 per year. Some 32,000 postal employés have consented to a regular deduction from their wages for the purpose of maintaining beds for their members and are also subscribing to the building fund. Nor has the important question of after-care been overlooked. A special feature of the scheme is the proposal that selected patients whose disease is arrested shall have the benefit of a certain amount of outdoor work, under medical supervision, and in time a properly equipped farm for the partial training of suitable cases in agricultural and allied pursuits will be developed. The estate purchased is of sufficient extent to allow of this development. In this way it is hoped that they may be fitted for a return to wage earning in different circumstances from those in which they acquired consumption and regrettable relapses avoided. The association has looked into the legal side of the question and convinced itself that the societies have power to coöperate under the present Acts and the scheme is now practically assured of success. There is no doubt that the movement will become one of the most important movements for the amelioration of the lot of the worker that has been initiated of late years. It cannot but have far-reaching effects on the health of the community and as a demonstration of what organised self-help can do in stamping out disease it is pregnant of tremendous results.

[2] "Mutualités et Tuberculose," par M. Albert Garrigues in l'Elan, March, 1904, p. 30.

[3] Herr Bielfeldt: "Assurance ouvrière etTube reulose," pp. 34-35 of Memoir presented to Paris Congress, 1905.

KING EDWARD'S HOSPITAL FUND FOR LONDON.

MEETING OF THE GENERAL COUNCIL.

A MEETING of the general council of this Fund was held on Dec. 8th at 15, Portman-square, London, W., for the purpose of awarding grants to hospitals and convalescent homes for the year 1905, the Duke of FIFE, acting as President in the absence of H.R.H. the Prince of Wales, now on a visit to India, being in the chair.

Sir JOHN CRAGGS reported that the amount received for general purposes by the Fund to Dec. 2nd amounted after payment of expenses to £93,865.

Mr. HUGH C. SMITH presented the report of the executive committee which stated that the committee recommended the distribution of £100,000 to the London hospitals, making, with the £1000 intrusted to the Fund by the London parochial charities for the convalescent homes, a total distribution of £101,000.

Sir WILLIAM S. CHURCH, chairman of the hospitals distribution committee, presented his report which stated:—

1. The committee have the pleasure to report that the executive committee, with the approval of His Royal Highness the President, placed in their hands this year the sum of £100,000 for distribution among the London hospitals, as against £79,000 in 1904.

2. The number of hospitals applying for grants this year remains at 106, six having fallen out and six new applications having been received.

3. The committee desire to reiterate their strong conviction of the undesirability of opening new hospitals without the fullest consideration both as to their necessity and as to the means of maintaining them.

4. In reference to the City Orthopædic Hospital the committee, having been informed that there is now a prospect of the hospital joining in the amalgamation of the National and Royal Orthopædic Hospitals, have recommended a grant subject to the arrangements made being approved by the executive committee.

5. The committee learn with satisfaction that negotiations for the amalgamation of the various throat, nose, and ear hospitals are in progress.

6. With regard to applications from newly established hospitals for grants from the Fund the committee recommend the adoption of the practice followed by the Hospital Sunday Fund which requires that under ordinary circumstances a hospital should have been maintained in existence for three complete years before becoming eligible to participate.

7. The committee are glad to note that St. George's Hospital and the Westminster Hospital have made arrangements to transfer the teaching of the preliminary and intermediate subjects of medical education to University centres, as recommended in last year's report.

8. A sum of £7500 has already been contributed by the King's Fund to the special fund for the removal of King's College Hospital to South London; a further grant of £4000, making in all £11,500, is now recommended in order to further this most desirable undertaking.

9. The question of fire prevention, to which a paragraph was devoted in last year's report, has received the careful consideration of the executive committee who, it is understood, are awaiting the decision of the London County Council with regard to the inspection of public buildings before reporting to the general council.

10. The committee have this year made two special grants in order to enable hospitals to accomplish specific objects which might be prejudiced by delay. In the case of the Great Northern Central Hospital an adjoining piece of freehold land, now for sale, should be at once secured in the interests of the charity and the committee have recommended that the whole of the purchase price, £1600, should be granted. In the case of the West Ham Hospital, which is about to enter into possession of an adjoining building recently acquired and much needed, the committee think that a sum of £2500 to cover the cost of furniture and fittings might be granted at once in order that the benefits of the extension may be immediately available for this poor district. The fact that both these hospitals are this year receiving more than would have been the case under ordinary circumstances and that parts of the grants recommended must be regarded in the nature of advances will of course be taken into consideration in the future.

11. The attention of the committee has been called to the considerable grants made in past years towards building schemes which in some instances have not yet been carried out. They would suggest that the executive committee should consider whether in future similar grants might not be retained by the Fund until the money is actually required and credited, together with the accrued interest, to the hospitals to which they were made.

12. The committee have, as heretofore, divided the grants into annual grants and donations. They recommend that in future grants made by the Fund should not be divided in this way. The Fund has now attained a permanent income of £50,000 per annum, which is more than sufficient to enable it to pay all the annual grants which it has hitherto made. There is, therefore, no longer any question as to its being able in future years to carry out its undertakings. Moreover, it must be remembered that many hospitals which only receive donations

are as much in need of yearly help as those receiving annual grants. The fact has also been brought to the notice of the committee that in some cases where grants have been allocated for the re-opening of beds the beds re-opened have not been permanently added to the accommodation of the hospitals, inasmuch as other wards have been subsequently closed. In other instances the hospitals to which grants have been made for the re-opening of beds no longer require the assistance of the Fund for that purpose. It seems, therefore, that the proper time has come for making the proposed change.

13. The reports of the visitors have, as usual, received the careful consideration of the committee and have been of material assistance in enabling them to apportion their awards. It is desirable to point out that circumspection with regard to suggestions should still be maintained lest any let fall by the visitors on the occasion of their visits should be interpreted, as has more than once been the case, as official recommendations, and afterwards quoted as the sanction for expenditure which it is sought to defray, in whole or in part, by grants from the Fund.

14. In addition to their published remarks the committee have followed their usual practice in recommending that various suggestions should be made privately to many of the hospitals. They would add that they have taken into special consideration several cases where the expenditure appears to be unreasonably high and also others where efforts are being made to reduce excessive expenditure.

Sir SAVILE CROSSLEY read the following list of awards, remarking that the distribution committee desired to draw attention to the fact that the absence of a grant did not necessarily imply dissatisfaction.

LIST OF AWARDS.

Alexandra Hospital for Children, £500; Belgrave Hospital, £1000, £500 to debt (the committee view with satisfaction the removal to South London); Blackheath and Charlton Cottage Hospital, £50; Bolingbroke Hospital, £2500 (to building fund); British Lying-in Hospital, £100; Cancer Hospital, no grants (an excellent institution); Central London Ophthalmic Hospital, £150; Central London Throat and Ear Hospital, £300 (in view of the negotiations in progress for the amalgamation of the Throat and Ear Hospitals the distribution committee would regard with grave dissatisfaction any steps towards rebuilding at present); Charing Cross Hospital, £2500 (£1000 to building debt); Chelsea Hospital for Women, £350; Cheyne Hospital, £100 (in consideration of the fact that curable cases are admitted); City of London Hospital for Diseases of the Chest, Victoria-park, E., £750, £1500 annual; City of London Lying-in Hospital, £500 (to building); City Orthopædic Hospital, £250 (subject to the arrangements to be made for amalgamation being approved by the executive committee); Clapham Maternity Hospital, £100; "Dreadnought" Hospital, £1500, £500 annual; East End Mothers' Home, £200 (£50 to service lift); East London Hospital for Children, £1700 (£700 towards improvements; the committee view with satisfaction the economical management); Eltham and Mottingham Cottage Hospital, £25; Evelina Hospital, £100 (the committee will be prepared to give substantial help towards the reconstruction of the out-patient department when the work has been commenced); French Hospital, £200; Friedenheim Hospital, £50; General Lying-in Hospital, £150; German Hospital, £200; Gordon Fistula Hospital, £50; Great Northern Central Hospital, £2350, £750 annual (special grant, £1600, to provide freehold land, *vide* paragraph 10 in report; the committee view with satisfaction the economical management); Grosvenor Hospital for Women and Children, £100; Guy's Hospital, £5000, £3000 donation, £3000 to debt (the committee view with satisfaction the economical management); Hampstead General Hospital, £2000 (for building); Home and Infirmary for Sick Children, £150; Home for Mothers and Babies and Training School for District Midwives, no grants (*vide* Report, paragraph 6); Hospital for Consumption, £1000; Hospital for Diseases of the Throat, £100 (the committee would view with satisfaction an amalgamation of the Throat and Ear Hospitals); Hospital for Epilepsy and Paralysis, £450; Hospital for Invalid Gentlewomen, £200; Hospital for Sick Children, £1000, £500 annual; Hospital for Women, £3100 (£2000 for building); Hospital of St. John and St. Elizabeth, £500 annual; Infants' Hospital, no grants (*vide* Report, paragraph 6); Invalid Asylum, no grants (the committee consider that this asylum is outside the scope of the Fund); Italian Hospital, £500 annual; Kensington Dispensary and Children's Hospital, £25; King's College Hospital, £5000, £1000 annual (£4000 to the fund for the removal of the hospital to South London, which the committee view with great satisfaction); London Fever Hospital, £200; London Homœopathic Hospital, £400; London Hospital, £3000, £5000 annual; London Lock Hospital (Female), £1500 (£1000 towards improving nursing accommodation); London Temperance Hospital, £1000 (to out-patient department); London Throat Hospital, £50 (the committee would view with satisfaction an amalgamation of the Throat and Ear Hospitals); Medical Mission Hospital (formerly entered as Cottage Hospital, Canning Town), Barking-road, E., £200 (£100 to building); Memorial Cottage Hospital (Mildmay Park), £50; Metropolitan Hospital, £500, £500 annual; Middlesex Hospital, £1250, £1000 annual; Middlesex Hospital (Cancer Charity), no grants (the committee in making their grant have, as hitherto, considered the cancer charity in conjunction with the grant to the Middlesex Hospital and therefore do not now separate it); Mildmay Mission Hospital, £250; Miller Hospital, Greenwich, £1250 (£500 to extension); Mount Vernon Hospital for Consumption (formerly entered as North London Hospital for Consumption), £1500, £1000 annual (the committee view with satisfaction the economical management); National Anti-Vivisection Hospital, no grants; National Dental Hospital, £25 (to debt); National Hospital for the Paralysed and Epileptic, £1250, £750 annual; National Orthopædic Hospital, £400 (this grant is given pending the amalgamation with the Royal Orthopædic Hospital, which the committee view with great satisfaction and for which a special sum is set aside); New Hospital for Women, £500; North-Eastern Hospital for Children, £500, £500 annual (£500 to reduce loan); North-West London Hospital, £750; Norwood Cottage Hospital, £25; Oxygen Hospital, no grants; Paddington Green Children's Hospital, £600 (£200 towards debt); Passmore Edwards' Acton Cottage Hospital, no grants (the committee are pleased to see that the hospital is not in need of help from the Fund this year); Passmore Edwards' Hospital, East Ham, £150; Passmore Edwards' Hospital for Willesden, £25; Passmore Edwards' Cottage Hospital, Wood Green, no grants; Poplar Hospital, £500; Queen Charlotte's Lying-in Hospital, £500; Queen's Jubilee Hospital, no grants (the committee feel unable to recommend a grant to this hospital until they are satisfied that the recent changes in the management have secured efficient administration); Royal Dental Hospital of London (formerly entered as Dental Hospital), £500 (to debt); Royal Ear Hospital, £500 (to building debt—the committee would view with satisfaction an amalgamation of the Throat and Ear Hospitals); Royal Eye Hospital, £350; Royal Free Hospital, £2250, £750 annual (£1500 to improvements); Royal Hospital for Diseases of the Chest, City-road, £400 (the £500 given in 1903 to open-air sanatorium, not since constructed, to be released and applied towards installation of the electric light); Royal London Ophthalmic Hospital, £1500, £2000 annual (the committee consider this hospital should receive more support from the public); Royal Orthopædic Hospital, £200 (this grant is given pending the amalgamation with the National Orthopædic Hospital, which the committee view with great satisfaction and for which a special sum is set aside); Royal Waterloo Hospital for Children and Women, £1500 (£1000 to building debt); Royal Westminster Ophthalmic Hospital, £300 (to debt); St. George's Hospital, £2000 (the committee view with satisfaction the efforts being made to reduce expenses and the transference of instruction in the preliminary and intermediate subjects of medical education to university centres); St. John's Hospital for Diseases of the Skin, £50; St. John's Hospital, Morden-hill, Lewisham, S.E., £150 (£50 towards improvements); St. Luke's House, £25; St. Mark's Hospital, £75; St. Mary's Children's Hospital, Plaistow, £1500 (£1000 to building); St. Mary's Hospital, Paddington, £2300, £1000 annual (£1300 to building debt); St. Monica's Hospital, £100; St. Peter's Hospital for Stone, £75 (towards lift); St. Saviour's Hospital, Osnaburgh-street, £200; St. Thomas's Hospital, no grants (the committee are not satisfied that the hospital is in need of present assistance from the Fund); Samaritan Free Hospital, £300, £500 annual (£300 to out-patient department); Santa Claus Home, £25 (in consideration of the fact that curable cases are admitted); South Wimbledon and Merton Cottage Hospital, no grants; Tottenham Hospital, £2000, £1000 annual, £2000 to building (the committee view with satisfaction the economical management); University College Hospital, £1000, £1000 annual: Victoria Hospital for Children, £1000 (£500 to building debt); West-End Hospital for Diseases of the Nervous System, £150; Western Ophthalmic Hospital, £150 (to debt); West Ham Hospital, £2500, £300 annual (special grant £2500, to provide the furniture and fittings for the new wards (*vide* Report, paragraph 10)); West London Hospital, £1000, £1500 annual, £1000 for debts (the committee view with satisfaction the economical management); Westminster Hospital, £2000, £750 annual, £2000 (to discharge existing debt; the committee view with satisfaction the transference of instruction in the preliminary and intermediate subjects of medical education to University centres); Woolwich and Plumstead Cottage Hospital, £25.

SUMMARY.

Annual grants	£27,800
Donations	72,200
Total grants to hospitals for the year 1905	£100,000

Mr. F. M. FRY, in the absence of Mr. WILLIAM LATHAM, K.C., chairman of the convalescent homes committee, read the report as follows:—Owing to the continued liberality of the trustees of the London Parochial Charities the committee have again £1000 to distribute. The committee are bound to consider the qualifications of applicants in respect, first, to their connexion with London, and secondly, of their coming fairly within the definition of convalescent homes. They have therefore given the preference to institutions directly connected with London hospitals. The following awards are recommended:—

Alexandra Hospital, Convalescent Home at Painswick, £25; All Saints' Convalescent Hospital, Eastbourne, £50; Charing Cross Hospital, Convalescent Home at Limpsfield, Surrey, £50; East London Hospital for Children, Convalescent Home at Bognor, £100; Hospital for Sick Children, Convalescent Branch, Cromwell House, Highgate, N., £50; King's College Hospital, Convalescent Home at Hemel Hempstead, £100; London Hospital, Convalescent Home at Tankerton, near Whitstable, £50; Metropolitan Hospital, Convalescent Home at Cranbrook, £25; Metropolitan Convalescent Institution, 32, Sackville-street, Piccadilly, W., £200; Middlesex Hospital, Convalescent Home at Clacton-on-Sea, £100; Mildmay Mission Hospital, Convalescent Home at Hendon, £25; Mrs. Gladstone's Free Convalescent Home for the Poor, Ravensbury-house, Mitcham, Surrey, £25; Paddington Green Children's Hospital, Convalescent Home at Slough, £100; Queen Charlotte's Lying-in Hospital, Convalescent Home at 20, Victoria-road, Kilburn, N.W., £25; Victoria Hospital for Children, Convalescent Home at Broadstairs, £75. Total grants to Convalescent Homes, £1000.

The Duke of FIFE, in moving the adoption of the report of the executive committee, said: On the work of this Fund and the admirable results which have been achieved I have nothing but the warmest congratulations. If this Fund had done nothing more than create a greater interest in the London hospitals and improve their organisation it would have earned the profound gratitude of the whole community. But it has done far more. Thanks to the magnificent generosity of some of its supporters, it has rendered very material assistance to the great institutions which it was founded to benefit. The good work of the League of Mercy has enlisted the sympathies and support of a class which it would otherwise have been difficult to reach and I am sure that you will agree with me when I say that all honour is due to the ladies and gentlemen who have worked so enthusiastically and successfully in its cause. Much as has been done of late years for the London hospitals, I feel that I could not occupy my present

position to-day without repeating what I have said publicly on other occasions, that their financial condition still leaves a great deal to be desired and I fear that this will remain the case until the London public will take a more adequate view of its duty towards its hospitals. In spite of the existence of this and other funds we cannot disguise from ourselves the fact that the great majority of the London hospitals are only kept alive by somewhat unsound methods of finance and continuous sensational appeals. The Duke of Fife then read a letter from the Prince of Wales:—

"It is a matter of sincere regret to me that my absence in the East prevents me from being present at this year's distribution meeting of the council of King Edward's Hospital Fund for London. This is the first occasion upon which I have been unable to preside since my appointment by the King to the presidency.

Please assure the meeting of my ever keen interest in the work and welfare of the Fund.

Although I only know the results of the past year up to November, enough is already shown to prove, as I trust all will agree, that they are most satisfactory and encouraging.

We have now secured a permanent income from investments amounting to £50,000 a year. I hope that, as the work of the Fund becomes better known, there will be an equally gratifying increase in the annual subscriptions.

I am glad to see that there are indications of the hospitals having already benefited to some extent from the statistical reports which have been issued to them by the Fund. I look forward with much interest to the results which will be shown in the next report, as it covers the working of a complete year since the first statistical report was available.

I have learnt with satisfaction that the recommendations of the medical schools committee have already been adopted by some of the London hospitals. Our only object has been, while strictly adhering to the original aim and object of the Fund, to assist by the best advice procurable in furthering the movement for the establishment of a more systematic and coördinated scheme of medical education in the metropolis. Such a result would, we hope, be beneficial to the medical profession, of which we are so justly proud, and to whose coöperation in our work we owe so much.

I have to thank Mr. J. G. Griffiths for a most valuable report, made at my request, on the existing system of hospital accounts. I trust that in his recommendations may be found a solution of the various difficulties which have hitherto confronted the hospital authorities in this important branch of their management.

My best thanks are due to the honorary officers and committees of the Fund for their untiring and valuable services and to each and all of those who serve on the general council.

Let me add, in conclusion, I am confident that the administration of the Fund is safe in the hands of those to whom it is entrusted and I am greatly indebted to you for acting in my behalf during my absence."

The LORD MAYOR seconded the adoption of the report, which was carried, and the meeting terminated with a vote of thanks to the Chairman.

THE DANGERS OF CIRCUMCISION AMONG POOR JEWS.

DURING the past three years a considerable number of deaths as the result of circumcision has been reported from different parts of London, and especially from the East-end, where a large number of Jews, many of them aliens of a low type, are living in circumstances of great poverty. But the poverty of the parents and the dirty environment of the children do not explain the occurrence of many of the catastrophes. On May 18th of this year a death which well exemplifies the risks attendant upon circumcision as practised in the poor districts of London was made the subject of an inquest. Mr. Wynne E. Baxter, coroner for the Eastern Division of London, held the inquiry, and we quote the circumstances of the death of the infant in question, a ten-days old boy, from the *Jewish Chronicle*. It appears that a mohel circumcised the deceased two days before his death. In an hour after the operation the dressing came off the wound and bleeding recommenced. The bleeding continued for two days when the infant died. Three medical men who were called in used their utmost endeavours to arrest the hæmorrhage but with no success. They do not seem to have come to any unanimous agreement as to the cause of death. The mohel, of course not a medical man, denied that the death was in any way due to his lack of medical knowledge and declared that the case was one of hæmophilia, a view which was disputed by the medical attendants. The coroner, after remarking that it was the second case of death from circumcision which had come before him within ten days, severely reprimanded the mohel, adding that he wished the mohelim of the district clearly to understand that if anything of a like nature happened again he would commit the offender upon a charge of manslaughter. In September last a case of death from blood poisoning after circumcision was the subject of an inquiry held by the same coroner, Mr. Wynne Baxter. In this case the post-mortem examination showed that death was due to septic poisoning originating from the wound. Mr. Wynne Baxter did not carry out his wise and necessary threat, being presumably satisfied that the septic infection was not in this case specially due to the default of the operator, but it stands to reason that an uneducated mohel is not likely to appreciate with any clearness the risk of not taking complete aseptic precautions. Quite recently another fatality occurred in the same district and the death of the infant was made the subject of a coroner's inquiry. Evidence on this occasion was given that the operation had been properly performed but that the deceased was suffering at the time from jaundice. Mr. Wynne Baxter, in his comments upon the case, said that he did not see that the evidence showed that there was any blame to be attached to anyone, a circumstance that was lucky for the mohel, but the facts furnished additional justification for the view that the operation of circumcision should be performed by a medical man. A medical man would have been able to recognise that the infant was not in a fit physical state to undergo the operation of circumcision.

The position of the very poor Jew in the matter of circumcision is a difficult one. Ritual circumcision is, of course, a part of the Mosaic law, and from a sanitary standpoint it is in some directions a desirable regulation. It is a comparatively simple operation and in the vast majority of cases can be performed successfully by anyone conversant with a simple procedure and awake to the necessity of cleanliness. At the same time there exists an element of danger which, under unskilfulness on the part of the operator, can easily develop to serious proportions. Some at least of those who profess to be expert mohelim, as proved by the tragic events chronicled, are unskilful or careless or both. The fact that they are not qualified men can be left aside for the moment, but some of them have not, it is said, been certified by the Initiation Society or sanctioned by the Chief Rabbi. This is a very serious matter, for while Jews of the better class procure, as a matter of course, the services of efficient surgeons to circumcise their infants, the extremely poor Jews of the East-end of London and similar districts in other parts of England are dependent upon mohelim who possess no surgical knowledge. Many parts of the country have been flooded of late by alien Jews of a low type who are both poor and ignorant. These are easily imposed upon by members of their own nationality who are but a little less ignorant themselves. It is among such people—Russian and Polish Jews—that fatalities arising from improperly performed circumcision may be expected to happen. The ordinary risks of a surgical operation, such as hæmorrhage or sepsis, become immensely aggravated when the operator is unskilful and when the subjects are dirty and diseased, and it seems to us that it behoves the Jewish community to look a little more closely into the existing position of affairs.

The mohel should possess the knowledge necessary to perform this operation but he should also be warned to examine every infant to see that he is in a fit condition for the performance of the rite. We know that only a qualified medical man possesses the knowledge to make such examination thoroughly and that there are many and great obstacles to providing medical men for all cases of circumcision, all of which are summed up in the simple statement that many of the patients' parents could never pay the medical operators a professional fee even on the lowest scale. But there should be a way out of the difficulty. It was suggested some two years ago in the *Jewish Chronicle* that the community might engage a regular staff of surgeons for the work of circumcision, when the fees could be made very small for each individual

case because, by coöperation between the medical men, the duties could also be made very light. Such a scheme, if feasible, would drive the ignorant mohelim from the field. Circumcision as an operation comes within the scope of a surgeon's duty. The Jewish authorities cannot insist that no one but a qualified medical man should perform the rite unless it be made possible for medical men to undertake the work systematically. But many influential Jews would like to see the occupation of the ignorant and dirty mohel disappear and we trust that it will not be necessary to wait for more tragedies, such as those to which we have briefly alluded, to occur before the necessary steps are taken to secure reform.

ASYLUM REPORTS.

Cork District Asylum (Fifty-third Annual Report for the year 1904).—The outstanding feature of this report is the extraordinary state of overcrowding which is depicted, to which reference is made below. Dr. Oscar T. Woods, the medical superintendent, reports that 394 patients were admitted during the year; of these not more than 63 had had one or more previous attacks. As regards age, not more than 12·4 per cent. were above 60 (being between 60 and 80), which is satisfactory; 121 patients were discharged recovered, or 30·7 per cent. of the admissions, and 18 relieved. 152 died, or 9·2 per cent. of the average number resident, which is rather high for this asylum but about the average for Irish asylums. The average number daily resident was 1655. On Jan. 1st the limit of accommodation was exceeded to the enormous extent of 118 males and 217 females, and we doubt very much whether, with the possible exception of one other institution, this state of things exists in another asylum in the United Kingdom. The number of admissions is the largest on record, passing the record made last year by 35. 113 cases, mostly incurable and many senile, were sent in from the workhouse, a state of things complained of much in England. The somewhat low percentage of recoveries to admissions is largely explained by the very unfavourable type of case received and the overcrowding and consequent difficulty in dealing with the acute cases. In one respect this asylum, in common, we believe, with Irish asylums in general, is better off, so far as cases for treatment are concerned, than are the English asylums; we refer to the rarity of general paralysis of the insane. Table IX. shows that there were only three cases of this disease amongst the 394 admitted. The enormous proportion of 43 per cent. of the deaths was due to pulmonary tuberculosis; the proportion in England is (for all forms of tuberculosis) from 17 to 18 per cent. This must be due largely to the overcrowding which exists. Dr. Woods points out that whereas the death-rate from pulmonary tuberculosis has been much reduced in England of late years it still remains very high in Ireland. It appears that whilst in 1870–75 the rate in England was 24 per 10,000 and in Ireland 19·5 per 10,000, in 1902 it was only 12·3 in England and as much as 21·7 in Ireland. Dr. Woods believes that many of the patients had the disease in an early stage on admission, and this opinion is held by many now in respect of pulmonary tuberculosis in asylums. The hospital accommodation is lamentably inadequate, the building erected in 1875 for a population of 680 being still in use with a population of 1620. Single rooms, also, originally provided in the ratio of 1 to 6 patients—a good provision—have now been reduced to the ratio of 1 to 13, which means that every night patients quite unfit for associated dormitories sleep therein. Even the sitting-room of the male attendant staff is occupied by beds. The Youghal Auxiliary Asylum, which was supposed to relieve the Cork Asylum, has done so but little. In face of the serious overcrowding at the latter asylum, to which the inspector of lunatics draws attention in his report, a heavy responsibility rests upon the committee of management. It would be a relief to know that steps are being taken to remedy this state of things, but as no report from the committee to the parent bodies (the Cork county and borough councils) appears with the asylum report, as is the case in England, it is impossible to know what their intentions may be. As the inspector properly remarks, the fact that no coroner's inquiry was found necessary for the period of 10 months covered by his report is very satisfactory in an institution so overcrowded and which has more than the average proportion of troublesome and dangerous inmates. But it is not fair that an asylum staff should be saddled with extra responsibilities because of the negligence of the managers. A very serious epidemic of typhoid fever prevailed from October, 1904, till February, 1905, 113 patients and 20 attendants being attacked; of the former 18 and of the latter three died. It is very interesting to observe, as has so often been noted when severe bodily disease attacks the insane, that the fever had a most beneficial effect upon the mental state of some of the cases. Some whose prospects of recovery were bad were perfectly restored in mind on recovery from the fever and 13 have been discharged recovered mentally. Cases of this kind afford a promising field for scientific work. The cause of infection was a polluted stream running through the asylum grounds. The inspector in a report on the outbreak says that the water taken "from the asylum streams, wells, and general supply" afforded in no case a favourable analysis. Here, then, is further scope for the energies of the managing committee. The sources of water-supply would seem from the above strangely diverse for such an institution. The deaths during the year were from natural causes, with the exception of one case in which a patient was killed in a murderous assault by another inmate. Heredity and intemperance, as in previous years, head the list of causes of insanity. Dr. Woods asks when the public will begin to learn that insanity can to a great extent be prevented. The nation's drink bill, he points out, is still a huge one. The Inebriates Act of 1898, which might have been a useful measure, has, Dr. Woods says, been of little avail on account of legal formalities. No certified inebriate reformatory has, it seems, been established in Ireland excepting one for females in Belfast and the State Reformatory at Ennis, where there are some 30 persons. Dr. Woods supplements his report by another upon "The Alleged Increase of Insanity," and the general conclusion arrived at is as follows. The proportion of insane to sane population in 1859 was, for England 1 to 535 and for Ireland 1 to 600. In 1903 these proportions were respectively 1 to 293 and 1 to 178. The increase in Ireland is ascribed to two causes: decrease of population (by emigration of the vigorous) and an average death-rate for the past 10 years in Irish asylums of 2·6 less on the average number resident than the death-rate in England. The greater death-rate in English asylums is ascribed to the greater prevalence of general paralysis of the insane in England. We infer, therefore, that the greater increase of insanity in Ireland as compared with England is mainly apparent and not real. Referring once more to the inspector's report we find that necropsies were held in only 27 per cent. of the deaths, which is far below the figures of English asylums. The last official figures for the latter show necropsies to have been performed in 76–77 per cent. of the deaths, but these figures include the returns from hospitals and licensed houses, where very few necropsies are obtained; they would be even higher for county and borough asylums alone. The low percentage of necropsies at Cork is possibly due to the prejudices, religious and otherwise, of the people.

MEDICO-LEGAL SOCIETY.

A Discussion on Post-mortem Examinations which do not Reveal the Cause of Death.

A MEETING of this society was held on Dec. 12th, Mr. Justice WALTON, the President, being in the chair.

Dr. F. J. SMITH, in opening the discussion, said that they had only to think of a few of the diseases of the nervous system, epilepsy for instance, or some of the chronic scleroses, or again of some of the zymotic diseases such as whooping-cough, to realise at once that in the absence of the clinical history of the case a necropsy performed with the most scrupulous care might fail to reveal the cause of death in the absence, and even in the presence, of a prolonged microscopical research. In the case of many vegetable poisons, without something to go upon suggesting a careful chemical analysis, what chance was there of detecting death from any alkaloid or similar substance, possibly with the exception of strychnine. He knew of none that would reveal its presence to naked-eye inspection. The argument need not be laboured, for it was only in the minds of quasi- or pseudo-specialists, who had for their own reputation to twist the indefinite appearances of natural death into some alleged definite indications of the precise cause of death, that any doubt existed. At the London Hospital during 19 months

there were 2123 necropsies performed carefully and recorded with exactitude and in no less than 102 there were found no naked-eye changes whatever to which death could be attributed. There were in that period 150 cases of death ascribed by clinical evidence to marasmus—i.e., wasting without obvious clinical cause—and diarrhœa and vomiting, and of these no fewer than 83 showed nothing whatever in any internal organ to which death could be ascribed and in all these it would have been impossible from necropsy alone to explain why the thread of life had snapped when it did. The remaining 19 cases were of various denominations, the most frequently occurring being prematurity, of which there were four examples. The reasons why they did not hear of more verdicts "cause of death unknown" was that when a medical man who had seen the patient during life did the necropsy he was competent to say that what he found post mortem was compatible with the symptoms which he had observed during life and could label the disease accordingly. If a stranger did the necropsy he magnified natural appearances into morbid ones and made statements accordingly, statements which nobody cared to, or perhaps could, controvert. That procedure of a coroner's court by which a verdict was arrived at on the evidence of a pathologist alone was simply a farce, for no such person, even if skilled, could by naked-eye evidence alone determine the true cause of death in a completely satisfactory manner. It was absolutely essential that with him should be associated the medical man who last saw the deceased alive. Dr. Smith did not deny the value of expert pathological evidence, he merely stated that it was insufficient for the needs of justice and the safety of the public and required to be supplemented by other medical evidence, but he went so far as to say that if only one person could possibly give evidence at an inquest that one should be a medical man who had seen the person alive even if it was only in his death agony. The real genuine pathological appearances of organs as opposed to the mere accidental exudations and congestions so often distorted by self-assertive would-be experts into evidence of the cause of death, were not likely to be overlooked by any medical man, though he must admit that it was possible they might be, for he had himself seen carcinoma of the sigmoid leading to perforation of the gut remain entirely unperceived by a medical men, but that class of mistake was of infinitely less importance than that of attributing a death from morphine poisoning to bronchitis which was a very possible or even probable mistake which might be made by one who relied upon post-mortem evidence only. Let them imagine that a person, in south-west London, for example, was taking medicine containing morphia and that some evilly-disposed person gave an overdose; the medical man in attendance, feeling that the disease should not have proved fatal, might refuse a certificate, a post mortem might be made and an inquest held without any reference to, or communication from, the medical man. Alleged signs of bronchitis might be found and a verdict in accordance might be given, and a foul murder might be hushed up, probably for ever. The mere possibility of such an occurrence was terrible and yet the ignoring of the medical man in attendance made such, one might say, probable. In Dr. Smith's experience within the last few months a case in point had occurred. Dr. Wynn Westcott asked him in September last to make a post-mortem examination on two children who had died after taking liquozone, a strong solution of sulphurous acid. At the necropsy he could find no possible or even probable cause of death, and had it not been known that repeated doses of simple irritant poison might leave no traces in the alimentary canal beyond those attributable to mere post-mortem changes he would have been obliged to say that he could find nothing to account for death had he not had the invaluable—nay, indispensable, if justice were to be done—support of the evidence of Mr. T. W. Morcom Harneis who had attended the deceased children for some three or four days with all the symptoms of irritant poisoning. It was on his evidence, combined with his own (Dr. Smith's), that a correct verdict was given—viz., poisoning from the effects of taking liquozone in repeated doses. It might be urged that the pathologist should suspect some insidious form of poison on no cause being found at the necropsy *primâ facie* sufficient to account for death, but such a connexion was by no means necessary, and common experience pointed in the same direction, especially perhaps in that terrible cause of infant mortality so-called overlying, where in the majority of cases there were no pathological conditions found after death.

Dr. W. WYNN WESTCOTT considered that whenever a medical practitioner had been in attendance on any sick or injured person in his last illness such medical man should be called upon to give evidence at the inquest. If there were any legal or medical reason for scientific precision as to the exact cause of death, then there should be a post-mortem examination of the body to determine the true cause of death. To assert that post-mortem examinations should be the sole guide from a medical point of view for a coroner's jury to find a verdict was to discard clinical evidence of the greatest value and to multiply the chances of the cause of death being recorded in an incorrect manner. The speaker remarked that he was quite aware that some post-mortem examinations made by general practitioners were of less value than those made by skilled pathologists.

Mr. JOHN TROUTBECK said that post-mortem examinations performed by any gentleman who was a medical practitioner and not generally employed in post-mortem work was not the most satisfactory way of dealing with such examinations. General medical practitioners ought to give clinical evidence at inquests if they possessed such evidence. According to the London County Council reports during the last five years, in 38,000 inquests there were only 116 cases in which death was stated to have been due to unascertainable causes. A coroner was not justified in holding an inquest unless the cause of death was unknown; in other words, that meant that there was no clinical history of the case. It was not a very satisfactory state of affairs that in cases of death where there was no clinical history general practitioners could be found who were prepared to state the cause of death without qualification or doubt. It was to be regretted that in some cases coroners had dispensed with having a post-mortem examination made, apparently because they considered a necropsy was of little or no value and was not worth paying for. He expressed his opinion, in conclusion, that reform was necessary.

Dr. C. TAYLOR protested against the suggestion that unless a medical man possessed the highest qualifications he was not to be charged with the duty of making a post-mortem examination.

Mr. G. PERNET commented upon the value of the clinical history in the case of an inquest and described the methods of post-mortem examinations carried out in Paris.

Mr. J. S. PART was of opinion that the general practitioner being cognisant of the clinical history should be the person to do the post-mortem examination.

Dr. A. POWELL also addressed the meeting and he was followed by

The PRESIDENT, who showed that the post-mortem examination was a link in the chain of evidence.

Dr. SMITH, in closing the discussion, drew attention to the urgent need there was for reform in the law concerning inquests.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

In 76 of the largest English towns 8400 births and 4816 deaths were registered during the week ending Dec. 9th. The annual rate of mortality in these towns, which had been 15·5, 17·9, and 16·7 per 1000 in the three preceding weeks, further declined last week to 16·1 per 1000. In London the death-rate was 16·3 per 1000, while it averaged 16·0 per 1000 in the 75 other large towns. The lowest death-rates in these towns were 7·0 in Hastings, 8·0 in Stockton-on-Tees, 8·1 in Hornsey, 9·0 in King's Norton and in Coventry, 10·2 in Brighton and in Bournemouth, and 10·5 in Leyton; while the highest rates were 20·8 in Barrow-in-Furness, 21·8 in Rotherham, 22·7 in Swansea, 23·4 in Preston, 23·6 in Liverpool, and 25·0 in Hanley. The 4816 deaths in these towns last week included 372 which were referred to the principal infectious diseases, against 338, 355, and 384 in the three preceding weeks; of these 372 deaths, 110 resulted from measles, 80 from whooping-cough, 55 from scarlet fever, 53 from diarrhœa, 52 from diphtheria, and 22 from "fever" (principally enteric), but not any from small-pox. No death from any of these diseases was registered last week in Hornsey, Bournemouth, Handsworth (Staffs.), King's Norton, Coventry, Stockport, Bury, Huddersfield, York, Stockton-on-Tees, Sunderland,

Tynemouth, or Newport (Mon.); while among the other large towns the highest death-rates from the principal infectious diseases were recorded in East Ham, Warrington, Blackburn, Preston, Gateshead, Rhondda, and Swansea. The greatest proportional mortality from measles occurred in Hastings, Blackburn, Preston, and Swansea; from scarlet fever in Blackburn; from diphtheria in Southampton; and from whooping-cough in Warrington and Gateshead. The mortality from "fever" and from diarrhœa showed no marked excess in any of the large towns. No death from small-pox was recorded last week in any of the 76 towns and no case of this disease was under treatment during the week in the Metropolitan Asylums Hospitals. The number of scarlet fever patients in these hospitals and in the London Fever Hospital at the end of the week was 3888, against 4120, 4127, and 4021 at the end of the three preceding weeks; 355 new cases were admitted during the week, against 425, 470, and 375 in the three preceding weeks. The deaths in London referred to pneumonia and diseases of the respiratory system, which had been 401, 490, and 478 in the three preceding weeks, declined again last week to 376, and were 72 below the number in the corresponding period of last year. The causes of 66, or 1·4 per cent., of the deaths in the 76 towns last week were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in West Ham, Salford, Portsmouth, Leeds, Hull, Newcastle-on-Tyne, and 41 other smaller towns; while the largest proportions of uncertified deaths were registered in Northampton, Birmingham, Liverpool, Warrington, Manchester, Rochdale, Sheffield, Sunderland, and Gateshead.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in eight of the principal Scotch towns, which had been 17·5, 21·9, and 18·7 per 1000 in the three preceding weeks, rose again to 19·9 per 1000 during the week ending Dec. 9th, and was 3·8 per 1000 in excess of the mean rate during the same period in the 76 large English towns. The rates in the eight Scotch towns ranged from 12·2 in Perth and 15·8 in Paisley to 25·1 in Dundee and 33·4 in Greenock. The 666 deaths in these towns included 45 which were referred to measles, 11 to diarrhœa, eight to whooping-cough, seven to scarlet fever, five to diphtheria, and one to "fever," but not any to small-pox. In all 77 deaths resulted from these principal infectious diseases last week, against 64, 84, and 61 in the three preceding weeks. These 77 deaths were equal to an annual rate of 2 3 per 1000, which was 1·1 per 1000 above the mean rate last week from the same diseases in the 76 large English towns. The fatal cases of measles, which had been 34, 48, and 33 in the three preceding weeks, rose again to 45 last week, and included 20 in Glasgow, 15 in Dundee, and nine in Greenock. The deaths from diarrhœa, which had been 14 in each of the two preceding weeks, declined last week to 11, of which four were registered in Glasgow, four in Dundee, and two in Edinburgh. The fatal cases of whooping-cough, which had been two, ten, and six in the three preceding weeks, rose again to eight last week, and included four in Dundee and three in Glasgow. The deaths from scarlet fever, which had been three, one, and three in the three preceding weeks, further rose last week to seven, of which four occurred in Greenock. The fatal cases of diphtheria, which had been four, eight, and five in the three preceding weeks, were again five last week, and included two in Glasgow. The death from "fever," which was a case of typhus, was registered in Glasgow. The deaths referred to diseases of the respiratory organs in these towns, which had been 130, 159, and 148 in the three preceding weeks, further declined last week to 126 and were 78 below the number in the corresponding period of last year. The causes of 20, or 3 per cent., of the deaths in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 20·8, 22·7, and 20·4 per 1000 in the three preceding weeks, rose again to 22·0 per 1000 during the week ending Dec. 9th. During the past four weeks the death-rate has averaged 21·5 per 1000, the rates during the same period being 17·8 in London and 17·3 in Edinburgh. The 160 deaths of persons belonging to Dublin registered during the week under notice were 12 in excess of the number in the preceding week and included eight which were referred to the principal infectious diseases, against seven in each of the two preceding weeks; of these, two resulted from whooping-cough, two from "fever," two from diarrhœa, one from scarlet fever, and one from diphtheria, but not any from small-pox or from measles. These eight deaths were equal to an annual rate of 1·1 per 1000, the death-rates last week from the principal infectious diseases being 1·4 in London and 0·6 in Edinburgh. The fatal cases of whooping-cough, which had been one, three, and one in the three preceding weeks, rose again to two last week. The two deaths from "fever" corresponded with the number in the preceding week. The fatal cases of diarrhœa, which had been two, three, and four in the three preceding weeks, declined again last week to two. The 160 deaths in Dublin last week included 32 of children under one year of age and 41 of persons aged 60 years and upwards; the deaths of infants exceeded the number in the preceding week, while those of elderly persons showed a decline. One death from violence and two inquest cases were registered; and 69, or more than two-fifths, of the deaths occurred in public institutions. The causes of five, or more than 3 per cent., of the deaths registered in Dublin last week were not certified.

VITAL STATISTICS OF LONDON DURING NOVEMBER, 1905.

IN the accompanying table will be found summarised complete statistics relating to sickness and mortality in the City of London and in each of the metropolitan boroughs. With regard to the notified cases of infectious diseases it appears that the number of persons reported to be suffering from one or other of the nine diseases specified in the table was equal to an annual rate of 9·0 per 1000 of the population, estimated at 4,684,794 persons in the middle of the year. In the three preceding months the rates had been 6·8, 9·4, and 10·0 per 1000 respectively. The lowest rates last month were recorded in Paddington, Kensington, Hammersmith, the City of Westminster, St. Marylebone, and Hampstead; and the highest rates in Hackney, Bethnal Green, Poplar, Bermondsey, Battersea, and Deptford. The prevalence of scarlet fever, which had shown a continuous rise during the four preceding months, declined again during November; among the various metropolitan boroughs this disease was proportionally most prevalent in Hackney, Shoreditch, Bethnal Green, Bermondsey, Battersea, and Deptford. The Metropolitan Asylums hospitals contained 3976 scarlet fever patients at the end of last month, against 2860, 3567, and 4187 at the end of the three preceding months; the weekly admissions averaged 449, against 368, 487, and 509 in the three preceding months. Diphtheria was considerably less prevalent than in the preceding month; the greatest proportional prevalence of this disease occurred in Fulham, Stoke Newington, Finsbury, Bethnal Green, Poplar, and Deptford. The Metropolitan Asylums hospitals contained 723 diphtheria patients at the end of last month, against 665, 730, and 796 at the end of the three preceding months; the weekly admissions averaged 100, against 83, 114, and 123 in the three preceding months. The prevalence of enteric fever showed a marked decrease from that recorded in the previous month; this disease was proportionally most prevalent in St. Marylebone, Hackney, Bethnal Green, Poplar, Lambeth, Wandsworth, and Deptford. There were 115 enteric fever patients in the Metropolitan Asylums hospitals at the end of last month, against 121, 143, and 157 at the end of the three preceding months; the weekly admissions averaged 17, against 20, 24, and 26 in the three preceding months. Erysipelas was proportionally most prevalent in Hammersmith, Bethnal Green, Stepney, Southwark, Bermondsey, and Deptford. The 25 cases of puerperal fever notified during the month included four in Camberwell, and two each in Paddington, Kensington, Fulham, Chelsea, City of Westminster, St. Pancras, Islington, and Southwark.

The mortality statistics in the table relate to the deaths of persons actually belonging to the various boroughs, the deaths occurring in public institutions having been distributed among the boroughs in which the deceased persons had previously resided. During the five weeks ending Dec. 2nd 7633 deaths of persons belonging to London were registered, equal to an annual rate of 17·0 per 1000; in the three preceding months the rates had been 16·2, 13·6, and 14·0 per 1000. The death-rates last month ranged from 11·1 in Hampstead, 11·3 in Lewisham, 12·6 in Woolwich, 13·3 in City

ANALYSIS OF SICKNESS AND MORTALITY STATISTICS IN LONDON DURING NOVEMBER, 1905.

(Specially compiled for THE LANCET.)

CITIES AND BOROUGHS.	Estimated population in the middle of 1905	NOTIFIED CASES OF INFECTIOUS DISEASE.										DEATHS FROM PRINCIPAL INFECTIOUS DISEASES.										Deaths from all causes.	Death-rate per 1000 living.	Deaths of infants under one year to 1000 births.
		Small-pox.	Scarlet fever.	Diphtheria.*	Typhus fever.	Enteric fever.	Other continued fevers.	Puerperal fever.	Erysipelas.	Cholera.	Total.	Annual rate per 1000 persons living.	Small-pox.	Measles.	Scarlet fever.	Diphtheria.*	Whooping-cough.	Typhus fever.	Enteric fever.	Other continued fevers.	Diarrhœa.	Total.	Annual rate per 1000 persons living.			
LONDON	4,684,794	—	2525	624	—	161	2	25	686	—	4025	9·0	—	236	62	16	100	—	26	—	88	568	1·3	7633	17·0	110
West Districts.																										
Paddington	147,935	—	39	5	—	6	—	2	13	—	55	3·9	—	6	—	—	1	—	1	—	3	11	0·8	196	13·8	124
Kensington	180,083	—	34	19	—	5	—	2	20	—	80	4·6	—	6	3	1	1	—	1	—	2	14	0·8	255	14·8	128
Hammersmith	119,037	—	30	13	—	3	—	—	24	—	70	6·1	—	3	1	1	4	—	—	—	2	11	1·0	175	15·3	146
Fulham	157,210	—	92	42	—	2	—	2	20	—	158	10·5	—	17	4	7	8	—	1	—	4	41	2·7	236	15·7	120
Chelsea	74,496	—	41	9	—	2	—	2	6	—	60	8·4	—	1	2	—	—	—	—	—	—	3	0·4	120	16·8	96
City of Westminster	175,606	—	47	15	—	3	—	2	15	—	82	4·9	—	3	—	1	2	—	—	—	1	7	0·4	224	13·3	83
North Districts.																										
St. Marylebone	129,453	—	27	9	—	6	—	—	19	—	61	4·9	—	—	4	—	—	—	—	—	1	5	0·4	185	14·9	66
Hampstead	88,142	—	13	4	—	1	—	—	5	—	23	2·7	—	—	1	—	—	—	—	—	1	2	0·2	94	11·1	96
St. Pancras	236,183	—	149	25	—	2	—	2	35	—	213	9·4	—	12	3	1	14	—	1	—	4	35	1·5	424	18·7	143
Islington	342,994	—	160	37	—	9	—	2	39	—	247	7·5	—	21	5	2	7	—	3	—	6	44	1·3	547	16·6	125
Stoke Newington	52,828	—	25	12	—	—	—	—	5	—	42	8·3	—	—	—	—	1	—	—	—	2	3	0·6	78	15·4	169
Hackney	228,479	—	191	33	—	23	—	—	35	—	282	12·9	—	—	2	3	2	—	6	—	2	15	0·7	361	16·5	129
Central Districts.																										
Holborn	56,481	—	32	2	—	2	—	—	2	—	38	7·0	—	1	—	—	—	—	2	—	1	4	0·7	112	20·7	77
Finsbury	98,207	—	54	21	—	3	—	—	17	—	95	10·1	—	1	2	2	1	—	—	—	1	7	0·7	216	22·9	110
City of London	22,485	—	10	2	—	—	—	—	5	—	17	7·9	—	—	1	—	—	—	—	—	—	1	0·5	31	14·4	96
East Districts.																										
Shoreditch	116,565	—	91	10	—	4	—	1	18	—	124	11·1	—	1	3	—	4	—	—	—	4	12	1·1	253	22·6	153
Bethnal Green	130,401	—	107	24	—	9	—	1	25	—	166	13·3	—	1	2	3	3	—	1	—	4	14	1·1	273	21·8	175
Stepney	305,466	—	211	45	—	5	—	1	72	—	334	11·4	—	19	5	5	15	—	—	—	10	54	1·8	633	21·6	169
Poplar	170,280	—	121	35	—	13	—	—	23	—	192	11·8	—	2	3	3	11	—	1	—	7	27	1·7	301	18·4	157
South Districts.																										
Southwark	208,568	—	115	33	—	7	—	2	47	—	204	10·2	—	53	—	1	2	—	2	—	6	64	3·2	415	20·8	121
Bermondsey	129,006	—	136	19	—	4	—	—	29	—	188	15·2	—	3	4	4	2	—	3	—	3	19	1·5	280	22·6	151
Lambeth	313,045	—	111	55	—	18	1	—	41	—	226	7·5	—	41	1	10	6	—	1	—	5	64	2·1	519	17·3	115
Battersea	177,532	—	143	17	—	1	—	1	33	—	195	11·5	—	8	7	1	2	—	—	—	3	21	1·2	300	17·6	162
Wandsworth	285,392	—	151	32	—	14	—	—	26	—	223	8·8	—	12	1	3	6	—	—	—	3	25	1·0	370	14·5	117
Camberwell	271,240	—	155	31	—	5	—	4	50	—	245	9·4	—	10	3	4	2	—	2	—	6	27	1·0	419	16·1	147
Deptford	114,495	—	100	23	—	6	—	1	20	—	150	13·7	—	2	3	1	1	—	—	—	2	9	0·8	177	16·1	122
Greenwich	103,493	—	37	16	—	2	—	—	12	—	67	6·8	—	—	1	—	—	—	—	—	2	3	0·3	132	13·3	103
Lewisham	144,420	—	49	18	—	5	—	—	18	—	90	6·5	—	11	—	1	—	—	—	—	2	14	1·0	156	11·3	84
Woolwich	125,372	—	64	18	—	3	—	—	12	—	97	8·1	—	2	1	2	5	—	1	—	1	12	1·0	151	12·6	103
Part of London	—	—	—	—	—	—	1	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

* Including membranous croup.

of Westminster and Greenwich, and 13·8 in Paddington to 21·6 in Stepney, 21·8 in Bethnal Green, 22·6 in Shoreditch and in Bermondsey, and 22·9 in Finsbury. The 7633 deaths from all causes in London last month included 568 which were referred to the principal infectious diseases; of these, 236 resulted from measles, 62 from scarlet fever, 56 from diphtheria, 100 from whooping-cough, 26 from enteric fever, and 88 from diarrhœa. The lowest death-rates from these diseases were recorded in Chelsea, City of Westminster, St. Marylebone, Hampstead, the City of London, and Greenwich; and the highest rates in Fulham, Stepney, Poplar, Southwark, and Battersea. The 236 deaths from measles were 21 in excess of the average number in the corresponding periods of the ten preceding years; this disease was proportionally most fatal in Fulham, Islington, Stepney, Southwark, Lambeth, and Lewisham. The fatal cases of scarlet fever were slightly below the corrected average number; among the various metropolitan boroughs the greatest proportional mortality from this disease was recorded in Fulham, Chelsea, St. Marylebone, Shoreditch, Bermondsey, Battersea, and Deptford. The deaths from diphtheria numbered 56 last month, against an average of 200 in the corresponding periods of the ten preceding years; this disease was proportionally most fatal in Fulham, Finsbury, Bethnal Green, Bermondsey, and Lambeth. The 100 fatal cases of whooping-cough were 13 in excess of the corrected average number; among the various metropolitan boroughs the greatest proportional mortality from this disease occurred in Hammersmith, Fulham, St. Pancras, Shoreditch, Stepney, Poplar, and Woolwich. The 26 deaths from enteric fever were only one-fourth of the average number in the corresponding periods of the ten preceding years; of these 26 deaths, six belonged to Hackney, three to Islington, three to Bermondsey, and two each to Holborn, Southwark, and Camberwell. The 88 fatal cases of diarrhœa were 19 below the corrected average number; among the various metropolitan boroughs the greatest proportional mortality from this disease was recorded in Fulham, Stoke Newington, Shoreditch, Bethnal Green, Stepney, Poplar, and Southwark. In conclusion, it may be stated that the aggregate mortality in London last month from the principal infectious diseases was nearly 28 per cent. below the average.

Infant mortality, measured by the proportion of deaths among children under one year of age to registered births, was equal to 130 per 1000. The highest rates of infant mortality were recorded in Chelsea, the City of Westminster, St. Marylebone, Hampstead, Holborn, the City of London, and Lewisham; and the highest rates in Stoke Newington, Shoreditch, Bethnal Green, Stepney, Poplar, Bermondsey, and Battersea.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified:—Fleet Surgeon J. Chambers to the *King Alfred*. Staff Surgeons: H. B. Marriott to the *Kent*; W. H. S. Stalkartt to the *Hermes*; F. Bolster to the *Indefatigable*; R. F. Bate to the *Diadem*, for Yokohama sick quarters; and M. C. Langford to the *Blake*. Surgeons: C. R. Sheward to the *Hermes*; G. M. Levick to R.N. Hospital, Chatham; D. D. Turner to the *Kent*; A. W. Iredell and J. G. Peebles to the *King Alfred*; P. D. Ramsay to the *Cornwallis*; and L. S. Whitwam to the *Waterwitch*.

In accordance with the provisions of his Majesty's Order in Council of May 13th, 1901, a commission of the rank and date shown has been restored to the following gentleman, formerly in His Majesty's Navy, who has been placed on the List of Volunteers for service in the event of war or emergency:—Walter Byron Maurice, Staff Surgeon, May 25th, 1905 (dated Dec. 6th, 1905).

ROYAL ARMY MEDICAL CORPS.

Lieutenant-Colonel C. Birt, from Pretoria, is appointed Clinical Pathologist at the Military Hospital, Millbank. Captain W. Bennett is posted to Edinburgh for duty. Colonel A. T. Sloggett, C.M.G., will represent the British Army at the Medical Congress at Lisbon in April next.

The undermentioned Lieutenants are confirmed in that rank:—Ryder P. Nash and Garfield Ormrod.

NEW SOUTH WALES CONTINGENT.

6th Imperial Bushmen: The undermentioned officer was granted temporary rank in the army whilst serving in South Africa: Lieutenant George Langrigg Leathes Lawson, Medical Officer (dated April 18th, 1900).

ARMY MEDICAL RESERVE OF OFFICERS.

Surgeon-Captain Ernest H. Tipper, 1st City of London Royal Garrison Artillery Volunteers, to be Surgeon-Captain (dated Dec. 9th, 1905); Surgeon-Lieutenant Hubert R. R. Fowler, 2nd Volunteer Battalion the Worcestershire Regiment, to be Surgeon-Lieutenant (dated Dec. 13th, 1905).

VOLUNTEER CORPS.

Royal Garrison Artillery (Volunteers): 8th Lancashire: Surgeon-Lieutenant C. E. M. Lowe resigns his commission (dated Dec. 13th, 1905); Charles Edward Maximilian Lowe (late Surgeon-Lieutenant) to be Captain (dated Dec. 13th, 1905).

Rifle: The Queen's Rifle Volunteer Brigade the Royal Scots (Lothian Regiment): Captain and Honorary Major J. McLaren resigns his commission, with permission to retain his rank and to wear the prescribed uniform (dated Dec. 13th, 1905). The undermentioned officer resigns his commission: Surgeon-Lieutenant R. Abernethy (dated Dec. 13th, 1905). 3rd (Cambridgeshire) Volunteer Battalion the Suffolk Regiment: Surgeon-Lieutenant-Colonel J. P. Atkinson is granted the honorary rank of Surgeon-Colonel (dated Nov. 1st, 1905); Surgeon-Lieutenant-Colonel and Honorary Surgeon-Colonel J. P. Atkinson resigns his commission, with permission to retain his rank and to wear the prescribed uniform (dated Nov. 1st, 1905). 3rd Volunteer Battalion the Bedfordshire Regiment: Surgeon-Lieutenant-Colonel D. Thomson (Brigade Surgeon-Lieutenant-Colonel, Senior Medical Officer, Bedford Volunteer Infantry Brigade) is granted the honorary rank of Surgeon-Colonel (dated Dec. 13th, 1905); Surgeon-Lieutenant-Colonel and Honorary Surgeon-Colonel D. Thomson (Brigade Surgeon-Lieutenant-Colonel, Senior Medical Officer, Bedford Volunteer Infantry Brigade), resigns his commission, with permission to retain his rank and to wear the prescribed uniform (dated Dec. 13th, 1905); Nelson Johnstone to be Surgeon-Lieutenant (dated Dec. 13th, 1905). 1st Volunteer Battalion the Prince of Wales's Volunteers (South Lancashire Regiment): William Joseph Collings to be Surgeon-Lieutenant (dated Dec. 13th, 1905). 4th (Perthshire) Volunteer Battalion the Black Watch (Royal Highlanders): Surgeon-Captain R. Stirling to be Surgeon-Major (dated Dec. 13th, 1905). 3rd (Renfrewshire) Volunteer Battalion, Princess Louise's (Argyll and Sutherland Highlanders): Surgeon-Captain W. D. Macfarlane resigns his commission (dated Dec. 13th, 1905).

ROYAL ARMY MEDICAL CORPS (VOLUNTEERS).

Northern Command: Leeds Companies: Harold Collinson to be Lieutenant (dated Dec. 13th, 1905).

IMPERIAL DEFENCE.

Field-Marshal Earl Roberts, in an address on Imperial Defence to the members of the Newcastle-upon-Tyne Chamber of Commerce on Dec. 7th, pointed out that it was just as essential to endeavour to insure success in war as in private enterprises. Business men did not neglect to insure their premises on the chance that fortune would favour the brave, and it was as an insurance against risk to the empire and to the nation that he asked the people of this country to help him in extending the principle of universal training. He urged most strongly the inculcating a deeper feeling of patriotism than at present prevailed amongst the boys and girls of these islands and in order to insure a satisfactory standard of efficiency being reached in the short time that men could reasonably be expected to undergo military training he insisted upon military training forming part of the curriculum of all State-aided schools. He would endeavour, he said, to get all colleges and secondary schools to adopt a similar course and to establish cadet corps, and encourage the formation of cadet corps, such as boys' brigades, Church and lads' brigades. All lads not at school, and under the age of 18 years, should be attached to one or another of these corps for the purpose of continuing their training and practice in rifle shooting. All such corps should be properly organised and placed under State supervision. Finally, one of his strongest reasons for advocating the principle that every man should be made capable of taking his place in the ranks of the army if required was that such a measure would do more than

anything else to benefit the auxiliary forces, and it was manifestly unfair that the duty of defending their country should perforce devolve entirely on the comparatively few good men who are prepared to leave their homes and their belongings, to sacrifice even their lives for her, while the shirkers who refuse to offer their services would gain all the advantage of their compatriots' devotion without any risk to themselves. Such a course persisted in meant the degeneration of the race and the decadence of the empire. Earl Roberts delivered an address on the same subject at a dinner of the London Chamber of Commerce which was held at the Trocadéro Restaurant, London, W., on Dec. 13th.

"THE PERSONAL HYGIENE OF THE SOLDIER."

Major C J. W. Tatham, R.A.M.C., delivered a lecture entitled "The Personal Hygiene of the Soldier" on Dec. 4th at the Raglan Barracks, Devonport. Major Tatham, in the course of his interesting address, referred to the essential importance of cleanliness, temperance, and clean living for the soldier. He stated that soldiers' food was far better cooked and served than it used to be and added that the arms and equipment carried under service conditions were too heavy for long marches; many cases that he had seen of men on the march falling out from exhaustion were called sunstroke but were really due to heavy weights and feeble circulation aggravated by marching. Major Tatham alluded to the necessity of pure water and said that by anti-typhoid inoculation it was hoped the young soldier would be in as safe a position as regards enteric fever as those who had by living amongst it all their lives become practically immune to the disease. Dysentery and enteric fever were the scourge of European armies, as beri-beri was of an Asiatic army and he did not think that the Japanese were more successful in dealing with this than the British were in dealing with enteric fever. At the conclusion of the address Major-General Sir J. Leech, K.C.V.O., who presided over a large audience, moved a hearty vote of thanks to Major Tatham for his valuable and instructive lecture.

Lieutenant-Colonel D. Prain, I.M.S., Director of the Botanical Survey of India, has been appointed Director of the Royal Botanic Gardens, Kew, vice Sir William T. Thiselton-Dyer.

Correspondence.

"Audi alteram partem."

SUDDEN DEATH FROM EXPLORATORY PUNCTURE OF THE CHEST.

To the Editors of THE LANCET.

SIRS,—The note which appeared in THE LANCET of Dec. 2nd (p. 1636) on this subject calls attention to a risk which is, I fear, too little appreciated by those who, unlike myself, have never had the misfortune to lose a patient in this manner. 11 cases have now been collected[1] and Dr. T. Oliver, who records three,[2] mentions that he can recall at least four others. It appears to me that considering the frequency of exploratory puncture of the chest, the smallest possible risks should be carefully considered; at present all that seems to have been done is to adopt emergency expedients on the spur of the moment, with very unsatisfactory results. I must plead guilty to having acted in this way myself in the case which I have recorded[3]; the patient became cyanosed and I performed artificial respiration, the heart failed, and I injected strychnine and digitalis. In extenuation I may plead that my case occurred before Dr. Oliver's paper appeared in THE LANCET and that I was then unaware of Dr. G. Carpenter's and Dr. A. E. Russell's communications.

With a view to rational therapeutics it would be well to consider the probable pathology of these cases. Speaking generally, they seem to occur most often in children and in patients who are pulled down by illness and whose lungs are the seat of definite disease. Caution, therefore, in exploring the chests of such subjects is the first and most important indication. Passing on to a more detailed consideration of the subject it may be said that the cases are divisible into two groups, those characterised by considerable hæmorrhage from the lungs and those where this symptom is slight and inconsiderable. Underlying both groups there seems to be (1) stimulation of the cardio-inhibitory centre by irritation of the pulmonary afferent branches of the vagus; (2) depression of the respiratory and vaso-motor centres.[4] Accepting this conception of the pathological process, the treatment should be directed towards obviating the vagus inhibition, stimulating the cardiac muscle, keeping the respiratory mechanism going, averting the consequences of vaso-dilatation—that is, cerebral anæmia—and in hæmorrhagic cases arrest of the hæmorrhage.

It is, I think, obvious that general anæsthesia would do little to minimise the risk. In the first place, pain seems to be an unimportant factor in the irritation of the vagus. In one of Dr. Russell's cases the needle was inserted and the patient remarked that he hardly felt it. It was then withdrawn and re-inserted with fatal result. In the second place, the anæsthesia could not be pushed sufficiently far to abolish vagus excitability. It must, however, be admitted that with chloroform the hæmorrhage, if it occurred, might be somewhat reduced in amount. It has been suggested that brandy should be administered immediately before the operation. This would perhaps slightly increase the force and rapidity of the heart's beat, but probably not more than the sight of the exploring syringe. I would suggest that theoretically atropin should be given as a prophylactic in quantity sufficient to produce some obvious physiological effect. This would depress the sensory terminations of the vagus, stimulate the respiratory centre, increase the blood pressure, and, if the dose were not too large at any rate, would not depress the musculature of the heart. The recumbent position is no doubt indicated in all cases and also the lowering of the head to facilitate cerebral circulation. Should untoward symptoms occur, the treatment would largely depend on the absence or presence of considerable hæmorrhage. In the absence of hæmorrhage no harm can be done by artificial respiration. Strychnine does not seem specially indicated, as it acts on the mammalian heart mainly by exciting the inhibitory centre. On the other hand, digitalis should be of value as it acts directly on the heart muscle and raises the general blood pressure, while not acting to so great an extent on the pulmonary vessels. It would be best injected over the cardiac region. In the severe hæmorrhagic cases it would seem that little can be done, as hæmostatics like ergot and adrenalin are rather worse than useless. Artificial respiration is also probably more harmful than otherwise. Here digitalis might conceivably be of value, but in all probability the most scientific course would be masterly inactivity.

I am, Sirs, yours faithfully,

J. M. FORTESCUE-BRICKDALE, M.A., M.D. Oxon.

Clifton, Bristol, Dec. 4th, 1905.

[1] British Journal of Children's Diseases, vol. ii., No. 10, p. 466.

[2] THE LANCET, Jan. 2nd, 1904, p. 26.

[3] Reports of the Society for the Study of Disease in Children, vol. v., p. 118.

[4] Russell: St. Bartholomew's Hospital Reports, vol. xxviii.

POST-GRADUATE TEACHING.

To the Editors of THE LANCET.

SIRS,—It is the happy lot of some people to wake to find themselves famous. This, however, was hardly the lot of the general practitioner who took up the issue of your esteemed journal of Oct. 21st last. Under the heading of "Annotations" he read that the distinguished President of the Royal College of Surgeons of England had stated that he considered a post-graduate course should be made compulsory after a certain period in a man's career, the object being to increase his knowledge and *correct* his opinions. In the same issue of your journal under the heading of "Incorporated Society of Medical Officers of Health" he read that "the statutory duties at present devolving on the medical officer of health prevented his undertaking consultative work in relation to infectious diseases." I have carefully looked up in the Medical Directory the names and qualifications of several medical officers of health and entirely fail to see that these gentlemen are for an instant specially qualified or in any way justified in attempting to teach the general practitioners of the country. Anyone caring to take the trouble has but to look at the Directory to discover this.

In your issue of Nov. 25th I was greatly interested in reading a post-graduate lecture by Dr. Alexander Morison and from the obscurity of my humble position as a general practitioner looked forward with pleasure to

being taught something. However, on reading the lecture I merely found a description of a simple manipulation with which I have been familiar for some years.

It appears to be the correct thing just now to criticise adversely the general practitioner and to point out the many directions in which he is deficient in knowledge of his profession. If all these deficiencies really exist, if it be necessary that after a time he should undergo a course of instruction "to increase his knowledge and correct his opinions," if he cannot diagnose the rashes which so frequently occur in every-day practice but should seek the aid of the more erudite medical officer of health, does not all this imply a grave defect in the medical curriculum? I submit that the general practitioner himself knows best his own weaknesses and deficiencies.

Post-graduate work to be of real help *must* be practical. If it were possible to give us at the hospitals greater opportunities for the performance of such operations as general practitioners are expected to perform; to help us in the diagnosis and treatment of diseases of women, which is a form of work constantly coming under our notice, and which from the rarity with which students are enabled to make examinations has to be learnt almost entirely after leaving hospital (unless a man happens to have held the post of obstetric assistant, which is obviously impossible for all); to enable all general practitioners to diagnose and treat the commoner forms of eye trouble, to use the ophthalmoscope intelligently, and to prescribe glasses for errors of refraction in all ordinary cases, except the most difficult; to diagnose and treat skin affections which are constantly coming under observation; to learn to examine, diagnose, and treat troubles which constantly come under his observation in connexion with the ear, nose, and throat, then with these and many other practical points the greatest help would accrue to the general practitioner from post-graduate courses. How far these subjects might be incorporated in the ordinary medical curriculum and how much of it should be relegated to post-graduate work is but a question of detail.

The requirements from a general practitioner are arduous and exacting. He is required at a moment's notice to diagnose and treat anything that is brought before him and I venture to think that some eminent consultants would find themselves distinctly on the horns of a dilemma if they were asked to treat at a moment's notice cases other than those they are accustomed to meet with in that branch of specialism to which they have devoted their lives. We do not want in post-graduate courses the mere utterance of words in lectures, the subject matter of which is often familiar to almost all the listeners, but something that will be of real practical help. We ask for bread, do not give us a stone! I am, Sirs, yours faithfully,

Tooting Common, Dec. 6th, 1905. REGINALD THORPE.

THE PROPOSED AMALGAMATION OF THE LONDON MEDICAL SOCIETIES.

To the Editors of THE LANCET.

SIRS,—I beg to thank Sir R. Douglas Powell for kindly replying to my letter in THE LANCET of Dec. 2nd, p. 1641, but I hope that he will forgive my saying that he has not *answered* it.

In the abstract I fully agree that the idea of forming a Royal Academy of Medicine with sections of medicine, surgery, obstetrics, electro-therapeutics, laryngology, and so on, is an excellent one, and if all these various societies were now on the point of taking birth, such an amalgamation would almost certainly happen, each branch of the Academy preserving its individuality and its Fellows or Members being assured their special privileges. And even in the present circumstances I feel sure that I should not differ from Sir Douglas Powell on the question of general principles. But as a devoted Fellow and a trustee of the old Medical Society of London—the parent of all the societies—I wrote last week on the advantage of there being a large, popular society, in which the general practitioner element should remain on even terms with the purely medical and purely surgical elements, and I asked this question: "In the amalgamation scheme what provision would exist for the continuance of this excellent arrangement?" Before expressing approval of our society (which Lettsom desired to establish "on a permanent basis") entering into the Hanover-square scheme, I should desire a definite and satisfactory answer to this question, and also an assurance that the memory and associations of Lettsom and his friend Fothergill should not be lost sight of, and that there should not be too great a sacrifice of the interests of its Fellows.

The old Medical Society of London is in its formation and work much like the Harveian and certain other "district societies" which, in Sir Douglas Powell's opinion, "should remain as they are." To break up such societies in order to establish a Royal Academy of Medicine would be, indeed, a sad misfortune, and to strip and ruin Lettsom's venerable edifice for that purpose would be to repeat the act of those Ecclesiastical Rulers of Rome in the Middle Ages, who turned the Colosseum into a quarry in order to use its well-hewn stones to build a Palace. I am, Sirs, yours faithfully,

Dec. 11th, 1905. EDMUND OWEN.

VARICOCELE—WHAT OF IT?

To the Editors of THE LANCET.

SIRS,—Referring to my letter under the above heading in THE LANCET of Nov. 11th, p. 1430, I am now able to supply the details as to cases of varicocele which were supplied with suspenders by the Surgical Aid Society in the year ending Sept. 30th, 1905. Out of 9094 male "cases" there were only 38 of varicocele. The total number of suspenders supplied for any cause was 72.

I am, Sirs, yours faithfully,

Duchess-street, W., Dec. 8th, 1905. E. MUIRHEAD LITTLE.

A CASE OF CLAY-COLOURED STOOLS WITHOUT JAUNDICE BUT ATTENDED WITH COPIOUS BILIOUS VOMIT.

To the Editors of THE LANCET.

SIRS,—I fully agree with Dr. W. Gordon's remark in THE LANCET of Dec. 9th, p. 1687, that the observations of Dr. J. T. Walker with regard to the pale colour of the stools met with in disease of the pancreas have not received adequate recognition and in my Hunterian lectures on the pancreas delivered in 1904 I expressed this view. Dr. Gordon does me the honour of criticising my opinion that "the characteristic white stools often seen in pancreatic disease in the absence of jaundice owe their pale colour entirely to the solidification of the fat when the motion cools, although there may be a normal amount of bile entering the intestines." This opinion is based not only on a large number of observations made on cases that have been under my care and which I have watched carefully, but also on a thorough analysis of the fæces of these patients made for me by Dr. P. J. Cammidge and other pathologists. Dr. Gordon in disagreeing with my conclusions does not say whether his opinion is based alone on the case he reports nor whether he has had an analysis made of the fæces. Judging from his statement—"An abundance of bile may enter the duodenum, yet if the pancreatic juice is cut off from the intestine stercobilin may be absent from the fæces"—I gather that he has had such an examination made, and it is unfortunate that in support of his view he has not published the details.

Before any reliable opinion could be expressed on Dr. Gordon's arguments it would be necessary to know the details of the analysis of the fæces and also whether a microscopical examination of the diseased head of the pancreas was made, for it is unusual, in my experience, for a cancer of the head of the pancreas to involve the pancreatic duct without at the same time obstructing the common bile duct. I am, Sirs, yours faithfully,

A. W. MAYO ROBSON.

Park-crescent, W., Dec. 11th, 1905.

TOXICITY OF URIC ACID.

To the Editors of THE LANCET.

SIRS,—Dr. A. P. Luff, in his address published in the current number of THE LANCET, p. 1667, says on p. 1670, "I believe that uric acid possesses no toxic properties whatever." Having reason for believing otherwise I beg a few lines of your valuable space to place the facts before your readers.

It is known that Sir A. B. Garrod and others have administered considerable doses of uric acid or its salts and that though these occasionally produced a little irritation of the

skin there was no very marked toxic effect. Repeating their experiments I found this result explicable on the ground that no measures had been taken to keep the uric acid in solution in the circulation. Consequently it was caught up and retained in the liver, skin, and other tissues, where it sometimes produced temporary irritation, but all its more important effects on circulation, temperature, and nutrition were meanwhile postponed for weeks, and even months—until, in fact, some outside condition favoured its re-solution in the blood stream. On remedying this defect in the experiment very different results are observed.

Years ago, believing, as Dr. Luff does now, that uric acid is not toxic, I performed and recorded many such experiments, but finding that serious and even dangerous results could be produced I felt no longer justified in continuing them. However, for those interested I make the following suggestion: Take two or three grains of uric acid three times a day with, say, 20 or 30 grains of an alkaline salt of potash or soda to insure constant solution in the blood stream, noting both before and during experiment such conditions as temperature, capillary circulation, blood pressure, and blood quality. That the results are not due to the alkali can be shown by a short course of this before the uric acid is taken, though in those whose tissues are already full of uric acid the alkali alone will doubtless produce similar but less marked effects. The result will be this—capillary circulation will slow, blood pressure will rise, temperature will fall, blood quality will deteriorate, and if the experiment is prolonged for weeks either albuminuria and Bright's disease or serious (even fatal) anæmia may follow. But before this the consequences will be apparent without even instrumental measurement of conditions.

The converse experiment is safe and it has been made by me in thousands of cases; for the public are dosing themselves with uric acid to an extent which renders the above experiment unnecessary. Your space being valuable I present only one case which I saw yesterday. A man, aged 42 years, capillary reflux six half-seconds, blood pressure 120 millimetres of mercury, blood decimal 0·75, as the result of four years of a diet free from unnecessary uric acid. Four years ago he was a constant sufferer from high blood pressure headache and was on the high road to Bright's disease; a cycle ride of 40 or 50 miles often brought on severe fatigue and headache and sent him home by train. Briefly, he was a debilitated semi-invalid in imminent danger of serious disease. To-day he is free from these indications; a 100 mile ride produces no noteworthy fatigue and on a recent occasion he rode 200 miles and was fresh enough at the end to attend as usual to his ordinary business. Up to two years ago his blood decimal was only 0·5 to 0·55; no doubt there were large stores of poison and much improvement was delayed until these were excreted. I have similar records in my case-notes sufficient to fill all the medical journals in Great Britain for six months. Some prefer argument to practical tests, but Nature is the final court of appeal and when the question is put correctly there is no doubt as to her judgment.

I am, Sirs, yours faithfully,

Brook-street, W., Dec. 9th, 1905. ALEXANDER HAIG.

DUPLICATE COPIES OF MEDICAL PUBLICATIONS.

To the Editors of THE LANCET.

SIRS,—The Manchester Medical Society has had prepared a list of all duplicate monographs, periodicals, and pamphlets in its possession; the list contains about 500 separate items. I shall be very glad to hear from other medical societies and institutions having similar lists wishing to make exchanges.

I am, Sirs, yours faithfully,

CUTHBERT E. A. CLAYTON,
Librarian to the Society.

Manchester Medical Society, Victoria University of Manchester, Dec. 11th, 1905.

ISOLATION HOSPITALS FOR SMALL SANITARY DISTRICTS.

To the Editors of THE LANCET.

SIRS,—Will you, through the medium of your columns, allow me to ask for particulars of isolation hospitals in small areas of population—i.e., about 3500? I am anxious to obtain particulars as to (1) plan and cost of suitable building; (2) cost of upkeep; (3) caretaker; and (4) nurses.

I am, Sirs, yours faithfully,

HERBERT M. SYLVESTER,
Medical Officer of Health, Leiston Urban District Council.

Leiston, Suffolk, Dec. 11th, 1905.

BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

Relief of Underfed Children.

IN consequence of the putting into force of the Relief (School Children) Order, 1905, the superintendent of out-relief has reported that he has received particulars from various head teachers in regard to 176 children who, they thought, were suitable subjects for relief. As to the mode of supplying the breakfasts the guardians have decided to avail themselves of Mr. George Hookham's offer to undertake the whole of the feeding arrangements for all school children certified as unfit by the guardians' officers on condition that he receives payment for those breakfasts at the rate of 1½*d.* per child. He further undertakes to return any surplus that may accrue at the end of the year. This arrangement will materially relieve the guardians' officers. Up to date 46 cases have been investigated with the result that 31 of the parents have promised to feed their children more satisfactorily. The children in the parish of Aston will be fed at coffee-houses or other suitable houses, the cost of the meal not to exceed 1½*d.* per head. The children in Aston Manor will be fed by the Aston Manor Relief Association at a payment of 1½*d.* for a breakfast and 1*d.* for a dinner. At Longton in the Stoke-on-Trent area the relieving officer received applications from the school attendance officers for the relief of 141 children. Up to the present the cases of 91 children have been investigated. Of these some were outside the provisions of the Order and in 49 of the remaining 55 cases the officer was informed that the income of the family was sufficient to provide the necessary food. The remaining six cases will be brought before the relief committee, as in no single instance was it found necessary to give relief on the ground of urgent necessity. Many parents objected to the investigations and resented the idea of the guardians feeding their children. It was found that whilst children were not being sent to school without food the need for clothing and boots in some cases was very apparent. The Hanley relieving officer has been surcharged the cost of relief given to the children of a couple who turned out not to have been married. By the Order relief can only be given to legitimate children living with their parents.

The Growth of Pauperism.

Some interesting figures showing the growth of pauperism in Birmingham were quoted at the last meeting of the board of guardians by the newly appointed Local Government Board inspector. While pauperism throughout the country has remained at practically the same proportion during the last ten years, in Birmingham it has increased from 4775 persons receiving relief, exclusive of vagrants, in 1895, to 6152 in 1905, an increase in ten years of 1377, equal to an increase of 28·8 per cent. In 1895 there were 841 persons receiving outdoor relief, but in 1905 there were 1683. As to indoor relief, there is a decrease of 116 children and 75 women this year as compared with last year, but there is an increase of 126 men. In 1871 the proportion of men receiving indoor relief to other people was 35·9 per cent., whilst by 1905 it had risen to 45·2 per cent. The percentage of women in 1871 was 30·3, as against 31·3 in 1905. The proportion of children has gone down from 33·8 to 23·5 per cent. Children were leaving the workhouses whilst more men were entering. Dealing with mortality statistics, there were 5482 deaths in the Birmingham parish in 1902. Of these 857 took place in the workhouse, or 1 out of every 7 In the hospitals there were in 1902 1065 deaths, being at the rate of about 1 in 5, so that in the whole of the parish 1 out of every 3 who died died in an institution. Comparing Birmingham with other large cities the inspector found that Liverpool parish, with a population of 147,000, had 5055 indoor poor as against Birmingham's 3504, whilst there were 2470 applicants for outdoor relief as compared with 1683 in Birmingham. Manchester, with a population of 132,316 in the parish, a little more than half that of Birmingham, had 3797 indoor poor and about the

same number in receipt of out-relief as in the case of Birmingham. Birmingham thus compared favourably with both these cities.

Guest Hospital, Dudley.

The thirty-fourth annual report of the above institution has lately been presented. The revenue during the year from ordinary sources was £3539, compared with £3388 for the previous year. The workmen's contribution showed a decrease, being £794 against £850 the previous year. This was attributed to the continued bad trade. The Sunday collections remained, as they had been for many years, amongst the lowest of the kind in the country. The expenditure during the year had been £3855, compared with £3924 the previous year and £3930 in 1903. The cases treated during the year numbered 829, compared with 738. The establishment of an eye department in connexion with the hospital and dispensary was now an accomplished fact. Of the 829 cases treated in hospital 572 were discharged cured, 98 relieved, and nine only were discharged unrelieved. There were 349 surgical operations performed.

North Staffordshire Infirmary.

The annual meeting of the governors of this charity has lately been held. The income showed a decrease of £936 and the expenditure a decrease of £32. The number of in-patients had increased by 299; the out-patients, on the other hand, had decreased from 13,920 in the previous year to 13,524. The serious falling off in the income was attributed to the Hospital Saturday Fund collections and the establishment subscriptions being much less than last year. The open-air ward for pulmonary tuberculosis had been in constant use and had proved of great benefit. Mr. W. H Folker was elected President of the infirmary, this being the first time that a member of the medical staff had been promoted to that office. In returning thanks the President recalled how in 1890 he suggested the founding of a special department for the treatment of diseases of the eye and the way in which it had been appreciated might best be seen by comparing the work done then and now. Then they had a weekly average of 20 patients in that department; now their weekly average was 120. In 1899 he started a fund for building a nurses' home and in the Coronation year the scheme was carried to a successful issue. There was yet another object he should like to see accomplished—namely, the extinction of their debt of £4832, £500 of which he was sorry to say had been added during this year.

Guardians and Vaccination Expenses.

Both the West Bromwich guardians and the Atherstone guardians have received a circular letter from the Corwen union asking the guardians to support a resolution in favour of the Vaccination Acts being amended so that only the children of paupers should be vaccinated or revaccinated at the expense of the ratepayers. In the Corwen union vaccination expenses have trebled since the Vaccination Order, 1898, came into operation. The matter is being considered by the various boards.

Water-supplies.

A few days ago there was only a little over 30 days' supply of water in the Leicester reservoirs and the position of affairs had become grave. 260 000 persons are affected and the water has been cut off ten hours per day. Six years will elapse before the new supplies are available. The analyst continues to give excellent reports on the purity of the Birmingham water. There is still some colour which is inseparable from a moorland water, but when the Caban reservoir is in use it is hoped that precipitation will greatly improve it.

Brewood Sewerage Scheme.

The Cannock rural district council has now formally declared open its outfall works. The design is the bacteriological system of sewage disposal and the works are computed to deal with 24,000 gallons per day. Arrangements are also made to deal with 24,000 gallons of overflow. The total cost of the works amounts to £1550.

Certification of Midwives.

The first prosecution by the city council under the Midwives Act of 1902 has recently taken place. The defendant was charged with "not being certified under the Midwives Act and yet using a description which implied that she was a person specially qualified to practise midwifery." It appeared from the Act that the defendant was allowed to practise midwifery up to April, 1910, but was not permitted to describe herself as a midwife. The case was dismissed with a warning on payment of costs.

Dec. 12th.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

Dr. Niven on the Reduction of the Manchester Death-rate.

ON Nov. 30th Dr. James Niven, the medical officer of health of Manchester, addressed a meeting of the Ancoats Healthy Homes Society on the high death-rate of the city. As regards the infantile mortality, he says it is due to the claims of industrial life causing many mothers to be ignorant of domestic work and the management of children. At the school age there is a great improvement in the death-rate, due, he believed, to better clothing and food, as well as a reduction in the number of infectious diseases as a result of the work of the sanitary authorities, the abolition of child labour, and improved conditions of housing. It may also be remembered that very many of the weakly ones have not lived to reach the school age, so that the survivors are a selection of the fittest. He attributed "the distinct retrogression" in the death-rate of people of advanced age to intemperance. He pointed out also that at this time of life pneumonia was a great cause of death and that it was partly due to the smoke and fog of Manchester, but was "more directly associated with social and insanitary conditions." To reduce the death-rate he would lessen the amount of smoke by mechanical improvements. He would make it compulsory that a girl "should take a course of domestic hygiene, including the management of children and instruction in the value of foods." He would have the housing conditions and drainage improved, as also the methods of selling, storing, and keeping milk, and would provide a consumption hospital for patients who could not be isolated at home, and (most difficult task of all) would have people taught "how to spend money to the greatest possible advantage." We may perhaps have to go North to find the most skilled exponent of this art.

The David Lewis Colony for Epileptics.

The report presented at the first annual meeting of the friends and supporters of the David Lewis Manchester Epileptic Colony was satisfactory as regards the work done and the benefit to the inmates but it appealed for "a very much larger endowment and annual income." Since its opening 110 cases have been admitted, the number on August 31st last being 95. Urgent requests were continually received for the admission of free patients but with the present means only available this cannot be ventured on. The medical report showed that the bodily and mental condition of the inmates was most encouraging. One of the speakers said that there was no class for whom less provision was made and none more deserving of—or, as he might have said, none who have more need of—better provision.

The Workhouse Infirmary, Stockport.

A new workhouse infirmary at Stockport was opened last week. It cannot be said that the scheme was hastily concocted and carried through, for the problem how best to relieve the congestion at the Shaw Heath workhouse has perplexed the guardians for years. It was first proposed to build an entirely new workhouse at Stepping Hill but this was defeated, as was also a proposal to extend the workhouse on its present site. Ultimately it was decided, with the approval of the Local Government Board, to build an infirmary at Stepping Hill. There is accommodation for 340 patients, 36 nurses, and 24 indoor officials and servants. The cost has been £130 per bed. The official and administrative block is in the centre and has a large waiting hall giving access to the whole building. There are four pavilions, two receiving wards, an operating theatre fitted with the latest surgical appliances, a nurses' home, a mortuary, and a laundry. The pavilions have each three floors, with a large general ward and a small one for special cases. There are nurses' duty rooms adjacent. At the end of the pavilions are exercise verandahs and escape staircases. A separate block has two wards for maternity cases, each containing six beds.

The Whalley Asylum Scheme.

What is called "a scene" or "a lively discussion" took place at a recent meeting of the Lancashire Asylums Board at Preston. The suitability of the site at Whalley, chosen for the erection of a paupers' asylum, has often been questioned, and Mr. H. Greenhalgh of Bury, a medical man, made a strong protest against its purchase. He is reported as saying: "The site is practically water-logged." This is a simple question of fact which could very soon be decided.

If it is not water-logged Mr. Greenhalgh's protest loses its force; but if it is the site is unsuitable and would scarcely have been chosen for some reason not apparent, unless the board had been assisted in its deliberations by some of the intended inmates of the asylum. Mr. Greenhalgh's protest was met by the chairman's refusal to discuss the question and there was "general interruption," drowning the speaker's voice. The future healthiness or unhealthiness of the asylum is a serious matter and considerable responsibility rests on those who put aside the deliberate opinion of their medical colleague, an opinion in which he does not stand alone.

Royal Infirmary.

At a meeting of the special committee for the election of the honorary medical officers of the Manchester Royal Infirmary on Dec. 5th, Mr. J. H. Ray, F.R.C.S.Eng., was elected to the office of honorary assistant surgeon.

Bequests to Manchester.

The late Mr. John Edward Taylor, who was the principal proprietor of the *Manchester Guardian*, has left, among other bequests, £1000 to the Manchester Infirmary and the large sum of £20,000 to the Owens College. By the death of Mr. A. W. Mills, the architect of important buildings in Manchester, the Victoria University benefits to the extent of £4000.

Sanitation in Towns.

The North-Western centre of the Sanitary Inspectors' Association held its eighteenth annual dinner in Manchester on Dec. 2nd. Mr. F. Vacher, medical officer of health of the county of Cheshire, presided. The Lord Mayor of Manchester, with other members of the corporation, was present, also Professor Rubert Boyce and Professor S. Delépine, with others connected with, or interested in, sanitary work. The Lord Mayor regretted that the corporation of Manchester did not emulate that of Liverpool some 40 years ago in becoming the possessor of available land within the city and so escaping the great difficulty that confronted Manchester from the enormous cost of land wanted for improvements.

Classification among Lunatics.

The Blackburn magistrates have complained to the guardians that at the workhouse harmless and quiet lunatics have to sleep in the same wards as dangerous maniacs and therefore they cannot certify that proper accommodation for lunatics is supplied. The increase in the number of lunatics to be provided for is causing great difficulty and the guardians and the magistrates are to hold a joint conference upon the matter.

Dec. 12th.

WALES AND WESTERN COUNTIES NOTES.

(FROM OUR OWN CORRESPONDENTS.)

Water-supplies in Glamorgan.

THE Glamorgan county council has decided to promote a Bill in the next session of Parliament giving power to the council to form water districts and to make inquiries and surveys with a view to the utilisation of water-supplies in South Wales. The very wide proposals of the council have alarmed some of the adjoining county councils and the Radnorshire council has decided to oppose the Bill. It is not suggested that the Radnorshire water-supplies will be required for the sole use of the county, but there is an evident desire that the best price should be obtained for the water that is taken from the district. The wealth of the county appears, indeed, to lie in its water. The prosperity of the largest town in the county—Llandrindod—is bound up in its medicinal springs and the rateable value of the county has been considerably increased by the Birmingham water schemes.

A Garden Village near Cardiff.

It is probable that the garden village which is being projected by Mr. John Cory will be rapidly laid out. Mr. Cory proposes to lay out an estate of some 200 acres, which is situated at Peterston, seven miles from Cardiff on the Great Western main line, and to let it in building plots of at least a twelfth of an acre. His desire is that the houses built on the estate shall be either detached or semi-detached and that there shall be only one house upon each plot. The cost of the houses will vary from £200 each to £500. The roadways will be from 40 feet to 60 feet in width and will be planted on each side with trees. A portion of the land has been reserved for the erection of public buildings, including a village hall, a library, and a school. There will be no licensed houses on the estate.

Isolation Hospital Charges.

For many years after the establishment of the Hereford fever hospital a charge was made for all patients who were treated in the institution. Recently the corporation has decided to adopt the same scale as that which is in force in the neighbouring city of Worcester, where patients are treated free of charge if they come from houses rated under £20 per annum and are charged 10*s.* 6*d.* weekly if from houses rated between £20 and £30, 15*s.* from houses rated between £30 and £40, and 21*s.* from those rated above £40 per annum.

Dust-laying on Glamorgan Roads.

With a view to keeping down the dust a small portion of the road near Porthcawl has been painted with tar sprinkled with coarse sand, and the success of this treatment has induced the roads and bridges committee of the Glamorgan county council to instruct the county surveyor to treat portions of the road near Bridgend in the same way. The cost is estimated at from £25 to £30 per mile, but the surveyor considers that as the surface of the road must be brought into as perfect a condition as possible before the application of the tar it is probable that there will be an actual saving in the cost of maintenance after the initial outlay.

The Difficulties of Medical Officers of Health.

At the meeting of the Truro (Cornwall) rural district council held on Dec. 6th the medical officer of health reported one of the district councillors for the condition of her house. He said that "the house was filthy and a nuisance and annoyance to her neighbours," and he added that he was sorry to complain of a district councillor who ought to set an example of respect for the law. The district councillor in question denied that the house was dirty and declared that the medical officer's report was made out of "hatred, malice, and spite." It was decided to allow the matter to stand over for a month when a further report could be made. Several of the members spoke of the impartial way in which the medical officer of health had done his duty and expressed every confidence in him.

A Notable Bristol Surgeon.

The presentation of an oil-painting of the late Mr. Richard Smith, surgeon, to the Bristol Municipal Art Gallery has been followed by some interesting reminiscences of this distinguished man in the *Bristol Times and Mirror*. It is stated that Mr. Smith was for nearly 50 years surgeon to the Bristol Infirmary and founded the museum at that institution. He was also for many years one of the proprietors of the *Bristol Mirror*. He presented several valuable Chatterton manuscripts to the city. On the occasion of the meeting of the British Association in Bristol during 1836 the *Athenæum* referred to him as the "most distinguished surgeon out of London." Mr. Smith was said to be eccentric in some respects. He died in 1843, aged 70 years, and was buried with Masonic honours in the Temple churchyard. He was extremely popular and the streets through which the funeral procession passed were crowded with people, nearly all the shops were closed, whilst the bells of many of the churches rang muffled peals.

Dec. 12th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Science and the New Cabinet.

Dr. T. S. Clouston, Vice-President of the Royal College of Physicians of Edinburgh, in a letter which appeared in the *Scotsman* newspaper of Dec. 8th, laments that none of the members of the newly constituted Cabinet have any special knowledge of, or interest in, scientific questions. He says that many medical men think that a "health conscience" is slowly rising as a new part of our modern moral scheme and that it should be most strenuously encouraged by every statesman with a modern side to his nature. Politics, however, seem to be so fascinating and old traditions as to the proper qualities of a member of the Cabinet are so hard to die, that in Dr. Clouston's opinion we shall probably still have to depend in this country on individual effort, fighting

an uphill battle, and looking with envy on Germany, France, and America, not to speak of the smaller States, with their new sanitary laws, their efficient medical inspection of schools, their health teaching of children, their magnificent encouragement of science teaching in their universities, and their earnest practical schemes to improve the physique and to stop degenerative processes among their people. None of the Cabinet Ministers are likely to do much for the introduction of social and sanitary reforms which have long ago been outlined by specialists in these subjects and meanwhile we must see our people flock from the country into cities with insufficient provision there for their health and welfare; we must see our young children dying in our large towns at twice the rate they ought to do; and we must see our science teaching inefficient for want of money. Dr. Clouston finally complains that political wrangling takes up most of the time of the House of Commons, leaving only the tag ends of its energies for social, scientific, sanitary, and medical measures for the physical and mental improvement of the people at large.

Glasgow Western Infirmary.

The annual report of the Western Infirmary has just been issued. It shows that the number of patients treated at the dispensary is more than that of the preceding year by 2567, while the indoor cases treated show an increase of 47 for the same period. The average daily number of indoor patients was 444·73 as compared with 437·75 in the previous year. The greatest number of patients in the hospital at one time was 493 and the smallest number 401. The average period of residence of each patient was 26·27 days, against 26·05 last year. The number of deaths was 464, or 8·12 per cent. of all the cases treated to a termination. Of the fatal cases, however, 143 died within 48 hours of admission, and by deducting this number the death-rate is reduced to 5·76 per cent. The cost of each bed fully occupied was £69 8*s.* 2*d.* as against £70 2*s.* 10*d.* in the previous year. The average cost per patient treated was £4 19*s.* 11*d.* While there has been an increase in the ordinary income of £175 14*s.* 1*d.* there has also been an increase in the ordinary expenditure of £164 17*s.* For this increase in expenditure there were, however, 2614 additional patients treated—namely, 47 indoor and 2567 at the dispensary. Students' fees show a considerable falling off as compared with the previous 12 months and the managers have had to draw largely upon the extraordinary income to meet the ordinary expenditure. Owing to certain large bequests the extraordinary income has enabled the managers to meet all claims upon them but this source of income is not always to be relied on and the infirmary cannot be considered on a sound financial basis till the ordinary income becomes sufficient to meet the ordinary expenditure. The new wing in course of erection is now nearing completion. This addition will provide accommodation for between 50 and 60 patients, but during the past year there has been a daily average of about 400 cases waiting to obtain admission. The original plan for the completion of the infirmary buildings embraced four pavilions at an estimated cost of £20,000 each. The one now in progress is a part of this plan, but in order to meet the clamant demands on the part of patients the other three pavilions are urgently needed. At present there is only cubic capacity in the infirmary for 416 beds, while the average number of fully occupied beds during the year was 444·73. It is therefore strongly recommended, with a view to both efficiency and economy, that the extension should be carried out, not in sections, but as a whole.

A Dinner to Sir Thomas McCall Anderson.

At a recent meeting of Glasgow members of the medical profession it was agreed that Sir Thomas McCall Anderson's lengthened services to the University should meet with some mark of appreciation. Professor McCall Anderson was appointed to the chair of clinical medicine in 1874 and was transferred to that of systematic medicine when Sir William Gairdner retired in 1900. He is at present the senior professor of the medical faculty at Gilmorehill and his recent reception of a knighthood gives point to the intended compliment. Arrangements have been made to have the dinner on Jan. 11th, when Sir Hector Cameron will preside.

Infantile Mortality in Glasgow.

The health committee of the town council of Glasgow has recommended the appointment of a lady practitioner for the purpose of, among other duties, professionally attending such children as are fed on milk supplied from the corporation milk depôts. The milk depôts have now been in operation for 12 months and the committee is thoroughly satisfied with what has been done. There are in Glasgow at present being fed on this milk over 600 babies. A fee of 1*s.* has been offered to the person who gives notification of a birth in certain localities within 48 hours and in that way the authorities have been able to exercise some influence on the mother as regards the treatment of her newly born child at a much earlier date than was possible previously. The health committee considers that the present infantile mortality in the city is a disgrace and a scandal to sanitary science. In 1871 the death-rate was 30·7 per 1000 and last year it was 18·8. In scarlet fever during the same period there was a fall of 81 per cent., in enteric fever of 77 per cent., and in diphtheria of 51 per cent. On the other hand, during the last 20 years, the decrease in infantile mortality has been only 6 per cent. The committee has obtained reports from 70 of the principal cities of the world giving their general death-rate and the rate of infantile mortality. In such a city as Buenos Ayres, which is bigger than Glasgow, the infantile mortality is 91 per 1000; in Stockholm and Christiania it is 100 per 1000. In Glasgow it varies between 125 and 140 per 1000. Another rather appalling fact is that while the average death-rate in Glasgow of legitimate infants under 12 months is 139 per 1000, the death-rate of illegitimate infants is 241 per 1000. The committee suggests that steps should be taken, in conjunction with other health committees in the kingdom, to make arrangements for the holding of a national conference on this subject.

An Asylum Tragedy.

An unfortunate incident occurred last week in Riccartsbar Asylum, Paisley. It seems that a warder was superintending some patients who were at work in the grounds of the institution and was in a stooping position when one of them suddenly struck him a violent blow on the head with a spade, inflicting injuries which caused almost instantaneous death.

Dec. 12th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Typhus Fever in Ireland: Mortality among Nurses.

TYPHUS fever was thought, erroneously as we now know, to have disappeared from Ireland some years ago. An outbreak has just been reported among the poverty-stricken people of the west coast. Two nurses sent down from the Mater Misericordiæ Hospital contracted it, of whom one died. A nurse (a niece of a Dublin physician) also caught it and recently died. Another devoted nurse, Nurse Vatry from the Cork-street Fever Hospital, was sent down to the infected area, contracted the disease fatally, and was buried at Oughterard a few weeks ago. She had charge of the small-pox patients during the outbreak at Achill some years ago. Sir William Thomson in his recent statement to the General Medical Council of the grievances of medical practitioners in the poorest parts of Ireland might fairly have added to his list the dangers to which they are continually exposed of contracting typhus fever in the discharge of the wretchedly remunerated duties. They die and, as a rule, little more is heard of them. The death of Dr. Hickey from typhus fever contracted in the discharge of his dispensary duties is reported in the papers of Dec. 12th. The universal sympathy that was expressed some years ago, after the death of the late Mr. Smyth of Burton Port, who had heroically conveyed in his boat some typhus-smitten patients from the island in his district to the mainland, will be remembered.

Royal University of Ireland.

All the members of the Senate of the Royal University have received an official statement of what took place at the disorderly meeting of students on Nov. 27th, with the opinion of the law officers of the Crown that even in the absence of disciplinary powers "the University has power to remove its officers or members for justifiable cause." A meeting of the Senate will be held on the 15th inst. to consider the statement.

Queen's College, Belfast.

Sir Otto Jaffé, a former Lord Mayor of Belfast, has contributed £3000 to the fund instituted for raising £20,000, that sum being needed in order to claim Sir Donald Currie's conditional and additional gift of £20,000. This generous donation makes the total contributions from the Jaffé family

£5090 and enables Sir Donald Currie's gift to be claimed, so that the college now has at its disposal the sum of £40,000. At a meeting of the council of the college, as at a meeting of the old students and graduates held in Belfast previously, a motion was passed tendering grateful thanks to Sir Donald Currie for his munificent offer towards the equipment fund of the college and expressing satisfaction that the condition upon which it was made had been fulfilled, as well as congratulations to the president of the college on the success of the measures he had organised to make the college efficient and expressing appreciation of his untiring zeal and perseverance in promoting the equipment fund.

Royal Victoria Hospital, Belfast.

At the meeting of the board of management of the Royal Victoria Hospital held on Dec. 6th it was announced that a sum of £500 had been received from friends (collected largely by Lady Jaffé) to name a bed in memory of the late Mr. Vere Foster, who was a great supporter of the charity. The Earl of Shaftesbury has also given £500, in fulfilment of a promise made at the last annual meeting, to provide a bed if four other charitable persons did the same. I understand that the names of the four other donors will shortly be announced.

Dec. 13th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Apparatus for General Anæsthesia.

AT the meeting of the Society of Surgery held on Nov. 29th M. Faure stated that he had used Ricard's apparatus for producing general anæsthesia in 100 cases and that he still maintained his first excellent impressions of the said apparatus. When using it he had never had any serious alarms or even uneasiness, except that in two cases the respiration stopped for a few seconds. Only one patient took the anæsthetic badly and he was an alcoholic. One patient, No. 99 in the series, died shortly after the operation but not from any reason connected with the anæsthetic. He was an old man suffering from intestinal obstruction, produced by a large renal tumour. M. Faure removed the growth but the patient gradually sank. In 45 cases there was no stage of excitement, there was slight excitement in 39, and somewhat more marked in 16. As to vomiting, 60 patients did not vomit at all and nine vomited profusely. The mean time of induction of anæsthesia was seven minutes. In 15 cases it was brought about in less than five minutes and in one at the end of two minutes. The quantity of chloroform used was a mean of 34 grammes per hour. In conclusion, M. Faure said that he had nothing but praise for this method of inducing anæsthesia.

Resection of the Cervical Sympathetic Ganglia.

At the meeting of the Society of Surgery held on Nov. 29th M. Delbet spoke on the treatment of facial neuralgia by resection of the sympathetic cervical ganglia. He recalled to mind instances in which this operation had succeeded for the condition in question, both from the practice of others and of himself. In his own experience all the cases operated upon had received immediate benefit where the neuralgia was of recent origin. Cases of long standing, however, were not benefited. The improvement following resection of the sympathetic could not be considered as a coincidence. For instance, in one case the operator could not find the sympathetic and the neuralgia was in no way relieved.

Cancer of the Penis.

At the meeting of the Anatomical Society held on Nov. 24th M. Morestin gave an account of five cases of cancer of the penis, of which four were cured by operation. In every case the growth was epithelioma. In one case there was marked lymphatic œdema. In two cases the inguinal glands were hypertrophied, so much so in one case that the crural vein had to be resected. Collateral circulation was established within 36 hours. One patient suffered in addition from a large hernia, for which radical cure was performed.

A Finger-guard for Exploration of the Larynx.

At the meeting of the Pediatric Society held on Nov. 20th M. Variot showed a little instrument for protecting the finger in cases of digital examination of the pharynx or larynx. He reminded his hearers that in children, when whooping-cough was suspected, it was often useful to provoke a cough by touching the vestibule of the larynx. This proceeding will generally excite a cough if a previous attack of coughing has not just ceased. All the finger-guards hitherto employed have had the objection of hindering flexion of the finger-joints, but the one shown by M. Variot is free from this. It is made of nickel-plated steel after the fashion of a ring with a greatly enlarged table (*chaton*[1]). This table covers the whole of the dorsum of the finger from the root of the nail to the metacarpo-phalangeal joint, but the palmar face of the finger is surrounded merely by a hoop. The phalangeal articulations thus have complete liberty of action.

Opening of the Claude Bernard Hospital.

On Nov. 30th the President of the Republic opened the new hospital for contagious diseases which has been erected on the site of the Hôpital de la Porte d'Aubervilliers and is dedicated to Claude Bernard. The architect is M. François Renaud, the architect of the Assistance Publique. The site is a long strip upon the glacis of the fortifications, the total length being nearly one kilometre, and the breadth, which is not always the same, has a maximum of 65 metres. The hospital is built on the separate block system. At the entrance is the administrative block, then follow in sequence a block for suspects, a block for cases of measles, a block for cases of scarlet fever, a general purposes (*des services généraux*) block, a spare block (*pavillon de réserve*), and finally a block containing laboratories, a dead-house, a laundry, and an engine-house, together with a disinfecting plant for the sewage of the hospital. All these blocks are on the ground floor which is built over a basement. The architecture is very simple and the buildings are well ventilated and lighted. The floor is everywhere tiled and the walls have rounded angles and are painted white. For a height of one and a half metres from the floor they are covered with a dado of enamelled sheet steel, the colour being pale blue. The heating is done by low-pressure steam and the radiators are placed along the walls in front of air-holes which can be shut or opened at pleasure. The lighting is electric and ventilation is carried on by openings behind the radiators to let in air and by escape openings in the ceiling. The windows also assist in ventilation. Each nurse has a separate room containing a bed, with an English wardrobe with a looking-glass, and a washstand draining into the sewer. These rooms are lighted by electricity and warmed by steam. An interesting point in the plant is the disinfecting apparatus for the hospital sewage. The President of the Republic, who was accompanied by two general presidential secretaries, was received at the entrance to the hospital by the Minister of the Interior, the Prefect of the Seine, the Military Governor of Paris, the Vice-President of the Paris Municipal Council, the President of the Conseil de Surveillance of the Assistance Publique, and others. After having inspected the hospital M. Loubet was taken to a ward which was decorated with flowers where various speeches were made by those present.

Elections.

The Academy of Medicine has just filled up two vacancies. In the section of therapeutics for which the election was held on Nov. 29th, M. Gilbert was elected by 60 votes out of a total of 78. On Dec. 5th, M. Doléris, accoucheur to the hospitals, was elected to fill the vacancy in the section of obstetrics by 59 out of a total of 81 votes. A vacancy in the managing committee of the Assistance Publique due to the resignation of M. Poirak on the expiration of his term of office has been filled by the election of M. Boissard, who was nominated by the accoucheurs of the hospitals as their representative.

Dec. 11th.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

The First-aid Service in Berlin.

THE first-aid and accident service has recently been the subject of considerable discussion in both the medical journals and the daily newspapers in Berlin. This service, so important for a large city where accidents are frequent in the streets as well as in factories, is far from being up to date. The history of first aid in Berlin is comparatively recent. At a time when various foreign cities—Vienna, for instance—having a much smaller population and

[1] Compare the kind of ring known as "marquise."

less street traffic were provided with an admirably working first-aid and ambulance system Berlin had scarcely any arrangements of that kind worth mentioning. The first attempt to introduce an organised system of first aid was based upon erroneous principles, as it was limited exclusively to the hours of night. An association of residents in a certain quarter of the city arranged for a so-called Sanitätswache (first-aid station); they hired a building, supplied it with the necessary instruments, dressing material, and other requisites, and appointed surgeons and assistants. The characteristic feature of these Sanitätswachen, which in course of time were established in every quarter of the city by local committees and exclusively by private subscription, was that they were closed during the daytime and only opened at night. The cases treated were not numerous, for serious accidents seldom happen at a time when the factories are closed and the street traffic has practically ceased. This was the state of matters until 1894, when another association connected with the insurance of workmen against accidents was founded, its principal object being to provide first aid in accidents to workmen. The stations thus created were, of course, open during the daytime and from the first they were very well attended not only by the persons for whom they were originally designed—namely, workmen injured in the course of their employment—but also by the general public. In order to save expense some of these Unfallstationen (accident stations) joined with the Sanitätswachen, so that they could use the same premises, the Unfallstationen providing for the day service and the Sanitätswachen for the night service, the committees and surgeons of the two associations being different. The Unfallstationen, although high in popular favour, were from the outset regarded by the great majority of the medical profession with some disapproval. For this there were several reasons. In the first place it was asserted that they did not limit their operations to first aid exclusively but that their medical officers also gave advice in other cases and even treated patients afterwards at the stations and in their own homes to the prejudice of the local practitioners. Secondly, it was said that in serious cases the injured persons would have better been conveyed to a hospital at once rather than taken first to an Unfallstation, as time was thereby lost and the patient had to make double journeys. The third objection was of a more personal character, as it was alleged that the Unfallstationen were private undertakings under the control of some medical men who recovered their expenses by the fees paid either by the injured persons themselves, or by the sick clubs, or by the workmen's insurance companies. Another ground of complaint was that the ambulance service of the Unfallstationen was very unsatisfactory. There existed some ambulances belonging to the Unfallstationen, but they were little used, as the committee for want of means had no horses of its own and the conveyance of injured persons to the hospitals was therefore placed in the hands of contractors who provided a sufficient number of vehicles, horses, and ambulance men. The strained relations between the medical profession and the Unfallstationen led as early as 1897 to the foundation of a new society, termed the Berliner Rettungsgesellschaft (the Berlin First-Aid Society), so that together with the Unfallstationen and the Sanitätswachen this society was the third to deal with first-aid matters. The Rettungsgesellschaft met with warm approval on the part of the medical profession, its president being the celebrated surgeon, Professor von Bergmann. All the principal hospitals of Berlin which had agreed to provide for a first-aid service were in sympathy with the Rettungsgesellschaft, and apart from the hospitals a certain number of first-aid stations were established in hired premises, after the pattern of the Unfallstationen, but all cases except those requiring first aid were strictly excluded. Moreover, they had no formally appointed surgeons, the service in the hospital stations being undertaken by the hospital surgeons and in the other stations by medical men residing in the district. The Rettungsgesellschaft also improved the first-aid service by creating a central office in special telephonic communication with all the hospitals and ambulance contractors. On the occurrence of a severe accident in which a number of persons were likely to have been injured it was possible to call at once by the telephone a sufficient number of surgeons and ambulances to the scene of the disaster. The central office also made an arrangement with all the hospitals of Berlin and the suburbs to be informed by them as to the number of unoccupied beds in their different departments. By this means the central office became very popular among the profession and the public; formerly it happened only too often that a patient had to be carried to several hospitals one after another until a vacant bed was found, but now the friends of the patient had only to telephone to the office inquiring in which hospital admission might be obtainable and an answer would be received at once. In the early days of the co-existence of the Unfallstationen and the Sanitätswachen both societies had manifold controversies with one another, controversies which, to the amusement of the public, were debated in the columns of the daily newspapers. In course of time these feuds ceased and the two societies formed a rather loose combination called the Verband für erste Hilfe (First Aid Society). Ultimately there was undertaken a reform of the ambulance service, of which a description has appeared in THE LANCET of Nov. 25th, p. 1578. It will appear from the above description that the first-aid service was exclusively the work of private initiative. The municipal authorities only paid a subscription to the three societies, and especially to the central office of the Rettungsgesellschaft, but notwithstanding representations made by the medical profession on the subject the municipality always declined to create a first-aid and ambulance service of its own. The profession was therefore much astonished to learn that the city authorities were recently willing to arrange for a central inquiry office after the pattern of that of the Rettungsgesellschaft but without providing for ambulances and the other work done by the society and at the same time to withdraw its subscription. As the withdrawal of the municipal subscription might lead to the dissolution of the First Aid Society, so that the ambulances and the first-aid stations might disappear without being replaced by municipal institutions of a similar kind, this unsatisfactory prospect has led to the calling of a meeting of the medical profession at which the medical members of the municipality were present. After a long and animated discussion a motion was adopted to the effect that the meeting was of opinion that the providing of a first-aid and ambulance service belonged to the duties of the municipal authorities and that this service ought to be maintained out of the public funds without private subscription, and, further, that, owing to the fact that the municipal authorities intended to withdraw their subscription to the private first-aid societies without taking over the work hitherto carried on by these societies, the meeting disapproved of the action of the authorities. This attitude of the profession has now led to the result that at the last meeting of the town council the matter was referred to a subcommittee.

Death of General-Staff-Surgeon Dr. Leuthold.

Dr. Leuthold, personal physician to the Emperor, general-staff-surgeon and chief of the Army Medical Corps, died suddenly from influenza on Dec. 3rd. Born in 1832, he studied at the Army Medical Academy and in 1857 entered the active service. For several years he was an assistant to the celebrated clinician Professor Traube and published a series of valuable papers. He took part in the war of 1870 as chief medical officer to a field hospital and afterwards became personal physician to the late Emperor William I. He reached the rank of general-surgeon and after the death of the late Dr. von Coler in 1901 became general-staff-surgeon but only held this appointment for four years. His successor as physician to the Emperor will be Dr. Elberg, hitherto second personal physician, whilst Surgeon-General Dr. Schjerning is promoted as his successor as general-staff-surgeon. Dr. Schjerning, who has been in the Army Medical Department since 1884, is well known as the author of memoirs on the wounds produced by modern guns, on radiography in military surgery, and on tuberculosis in the army.

Dec. 11th.

ITALY.

(FROM OUR OWN CORRESPONDENT.)

The Unrest in the Universities.

ITALIANS are looking on with admiration and not a little envy at the quiet, business-like way with which, in the British Isles, one great political party gives place to another without prejudice to the foreign policy of the

empire and with only such changes in domestic legislation as shall, on an appeal to the constituencies, be indicated by the majority. The spectacle has its salutary lessons for them, comparing, as they do, with the regularity, the discipline, and the good temper of British parties, the confusion, the recrimination, and the mutually thwarting activity of the groups into which their Right and Left ("Destra" and "Sinistra") are divided. The same contrast is only too conspicuous in their academic life. I have drawn attention to the deplorable arrest of undergraduate study in the Roman medical school by the defective arrangements militating against clinical instruction, arrangements in course of being recast and placed on a proper footing, but all too late to retrieve the loss of time and the "solution of continuity" in work. And now, it appears, the so-called "strike" in the Roman has had its response or *contre-coup* in the other schools—from Turin to Palermo, from Padua to Naples. In these and other provincial universities the "grievances" of the students, often real enough, are the occasion, not always unwelcome, for a defiance of authority and a suspension of work incompatible with sound, concentrated, profitable qualification for professional life. The situation is indeed serious and is engrossing the attention of an already distracted legislature. Let us hope that, with the adoption of British representative institutions, Italy may steadily and speedily acquire something of the mental balance and the harmonious coöperation to which these institutions owe their inception and their efficiency in practice.

Science and Medicine in the Upper Chamber.

Continental legislatures have one characteristic that even the British might profit by—that is, the larger infusion of the scientific and professional element in the Upper House of Parliament. Italy, in particular, could ill dispense with the trained, experienced, impartial intellects with which, from time to time, she reinforces her Senate. The last *infornata* (batch) of academic and professional notabilities which she has sent up to the Alta Camera has been received with general satisfaction, including, as it does, a number of well-tried functionaries in the world of science and medicine. Antonio Pacinotti of Pisa, where he fills the chair of Technical Physics, is the author of many important discoveries in the sphere of electric engineering and has worthily maintained the traditions that have made electrophysics almost an Italian science, beginning with Galvani, continued by Volta, Nobili, and Matteucci, and, in recent years, brilliantly supplemented by Marconi with his wireless telegraphy (*telegrafia senza fili*). Another new Senator added, *consensu omnium*, to the Upper Chamber is the Milanese physician, Dr. Malachia de Cristoforis, a man of patrician family and from his youth up devoted to medical science and practice. A volunteer under Garibaldi he settled down in professional life as soon as Italy was "one and independent" and set himself to elevate and to improve the masses by every means open to medicine, clinical and hygienic. His countrymen owe it in great measure to him that cremation has so far triumphed over ecclesiastical prejudice as now to have become a national institution; and so thoroughly has he impressed his fellow citizens with his philanthropy and unselfish intervention in affairs that he was three times returned to the Chamber of Deputies for a Milanese constituency. Taking his seat among the members of the Extreme Left, he disarmed the enmity of party in all but obscurantist opponents, his policy being ever directed to what, rightly or wrongly, he held to be the public good, while he advocated his opinions with a sincerity, a fairness, and a fulness of knowledge too rare in politics not to be prized even by those who served in other camps than his own. Another well-earned distinction of the same kind is that conferred on the head of the Tuscan Medical School, Dr. Pietro Grocco, who has filled professorial chairs in Padua, Perugia, Pisa, and Florence, always with efficiency and popularity. In Florence he founded the Istituto Antirabbico and in his native Albonese he presented to the town an Asilo Infantile with the munificent endowment of 200,000 lire (£8000). To him the great balneary resort of Montecatini owes much of its attractiveness, while as a consultant he is hardly better known in Florence than in the other Italian centres to which he is frequently summoned. To congratulate him on his promotion to the Upper House the students of the last three medical years prior to graduation, together with his clinical staff, entertained him at a great banquet, when the toast of the evening was eloquently given by Dr. Cesare Baduel, professor of medical pathology, and feelingly acknowledged in the finished language which Professor Grocco has always at command. During the symposium, in all respects successful, it was stated that the medical world will soon be enriched by an important contribution from the new senator, "Lezoni di Clinica Medica," embodying much that is sound as well as novel in theory and practice.

Dec. 9th.

NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

New York Red Cross Society.

THE movement to organise an effective Red Cross Society for New York State has met with great success and the first annual meeting of the New York State Branch of the American National Red Cross Society was recently held in this city. It is the intention to enrol as many subdivisions throughout the State as possible and much has already been accomplished. Daughter societies now exist in Buffalo, on Long Island, and in Westchester County, and steps have already been taken for the creation of others in Brooklyn, Syracuse, Rochester, and Rome. It is planned to keep the organisation available for prompt service, not only in war time but also in event of serious catastrophes of any nature, such as floods, extensive conflagrations, wind storms, &c., and the enrolment of a permanent corps of medical officers and nurses for emergency service is one of the most important features.

Distribution of Foundlings.

Some months ago considerable popular indignation was aroused by newspaper accounts of what appeared to be reprehensible carelessness on the part of those in charge of the disposal of the older children of the New York Foundling Hospital. It has been the custom at stated intervals to send out West little companies of children who have reached the proper age in order to apportion them among such families in the smaller towns as might be desirous of adopting a child. The task of selecting their destinations fell upon the two or three sisters who were in charge of the little caravans, guided by the local priests of the various places visited. It was alleged that very poor judgment was exercised and that the children were given into the hands of those who were unfit to care for them properly and would be likely to ill-use them. The New York State Board of Charities to investigate these criticisms recently sent two commissioners on an inspection trip to those regions to which children had been consigned. In their report these gentlemen said that from personal observation and trustworthy information they had been convinced that proper care was used in selecting the homes, that the families were all respectable, and that there was no evidence to indicate that any of the children had been taken from any save praiseworthy motives.

A Loss to American Medical Journalism.

The forthcoming incorporation of the *Medical News* with the *New York Medical Journal and Philadelphia Medical Journal*, which is announced to take place on Jan. 1st, 1906, is a matter for universal regret. The *Medical News* has always been one of the more important medical weeklies and this untimely termination of its career after over 60 years of successful existence is a great pity.

A False Death Certificate.

The Health Department of the city of New York has made public the fact that for the first time in its history a physician has been punished by imprisonment for making a false report on a death certificate. The necropsy on a young woman recently dying in suspicious circumstances revealed the fact that death had followed a criminal operation, and the diagnosis of the coroner's physician was sepsis following uterine infection. The death certificate that had been signed by the attending physician gave as the cause of death sloughing fibroid tumour and paralysis of the heart.

A Medical Black List.

The physicians of St. Louis, Missouri, have become so impressed with the difficulty of collecting fees from certain patients that there is being prepared for their benefit a list of those townspeople who have a reputation for imposing upon their medical advisers. The volume is said to contain over 15,000 names of individuals who have not paid their medical

men's, druggists', or undertakers' (*absit omen!*) bills. The sheep are also to be recorded as well as the goats, for 70,000 persons are enrolled who are said to be *good*—i.e., are men of substance with property and at least a modicum of conscience. It is proposed to keep the information up to date by the publication of a monthly bulletin and by an annual revision. If on being called to a patient the medical man finds the family inscribed among the delinquents he is supposed to exact payment in advance before making the visit.

For a Uniform Quarantine System.

On Nov. 9th and 10th several questions of extreme importance for the material progress of the Southern States were satisfactorily settled at the Conference on Quarantine and Immigration held at Chattanooga, Tennessee. The endless disputes and bickerings and mutual recriminations between the authorities and people of the States involved formed a very unlovely spectacle during the recent yellow fever outbreak and there is little doubt that had it been possible from the first to enforce a rational system of quarantine and sanitary regulations with impartial uniformity a great saving of life and property would have been effected. This much was unreservedly admitted by the 300 delegates representing 16 Southern States who were present at the conference called to consider the question but when it came to taking action in accordance with this broad principle the petty jealousies and local prejudices of the different States concerned formed serious obstacles to effective action. The feeling of mistrust of the Federal Government and of aversion to having it acquire any elements of authority which shall seem to curtail the individuality of the separate States is still strong with the generation that remembers only too well the cruel inhumanities of the "reconstruction period," and there was much opposition before a motion introduced by the chairman of the Quarantine Committee was finally adopted with but one dissenting vote. This requests Congress to enact a law whereby coast, maritime, and national frontier quarantine shall be placed exclusively under the control and jurisdiction of the United States Government, acting in coöperation with the various State Boards of Health. Congress is also asked to make adequate appropriations to enable the sanitarians to exterminate as nearly as possible the yellow fever-bearing mosquito in its habitat in the United States. The legislatures of the several States are urged to enact sanitary regulations which shall be in harmony with each other and permit of satisfactory inter-State quarantines. Another difficult subject which was satisfactorily handled was the matter of immigration regulation. It was the sense of the resolution adopted that, while the conference approved and endorsed the recommendations of President Roosevelt for changes in the immigration laws which should make it more difficult for the pauper and criminal classes to enter the United States, all desirable white immigrants were expressly invited to disregard representations that they were unwelcome and to come freely to help to develop the Southern resources.

Dec. 4th.

AUSTRALIA.

(FROM OUR OWN CORRESPONDENT.)

New Medical Curriculum at the University of Melbourne.

LAST year the Royal Commission on the University of Melbourne presented its report. While approving, on the whole, of the work done in the Faculty of Medicine it suggested certain alterations in the curriculum. At present the examinations are annual and students attend hospital practice in their second year. The first year is given up entirely to science subjects—physics, chemistry, and biology, and the medical students attend the lectures and courses on these subjects in common with the science, engineering, and arts students. The Commission recommended that the science in the first year should be reduced and special courses given adapted to the requirements of medical students and that anatomy should be a first year subject; that students should not attend hospital until the completion of two years of the course devoted solely to University work; and that instead of annual examinations the number should be reduced to three—one at the end of the first year in biology, physics, chemistry, and anatomy; one at the end of the third year in the whole of anatomy and physiology; and a final at the end of the fifth year in medicine, surgery, midwifery and gynæcology, pathology, public health, and jurisprudence. The Faculty of Medicine appointed a committee to consider these recommendations and to organise a new curriculum. After many meetings and much thought it devised a scheme which was approved by the Faculty and council and sent to the Senate. Here it met with determined opposition from some of the leading clinical teachers at the Melbourne Hospital. The new scheme reduced the amount of physics, biology, and inorganic chemistry in the first year and added a term of organic chemistry. Instead of anatomy histology was put in the first year. The whole course of five years was divided into two parts of approximately two and a half years (the first half to be entirely at the University and the second half at the hospital) and the course into four divisions instead of five years as before. The first division included the pure science subjects; the second division anatomy and physiology; the third division materia medica, pharmacy, therapeutics, dietetics and hygiene, bacteriology and pathology; and the fourth division medicine, surgery, obstetrics and gynæcology, and forensic medicine. The objections taken in the Senate were that the arrangements of terms and examinations would be very unfair to students who failed in their examination, especially in the second division, in the middle of their third year; that 18 months was not sufficient time for anatomy and physiology, and two and a half years not sufficient for clinical work, especially with an examination in pathology and therapeutics in the middle of it. Those who opposed the scheme asked that it might be referred to a select committee to discuss the points mentioned and to try to bring up some modification that would be acceptable to all. The Faculty objected, maintaining that its scheme was practically perfect and could not be amended and by a narrow majority of 30 to 28 votes it won. The scheme was then considered in committee of the whole Senate. On the first important proposal—that the curriculum should consist of four divisions with four examinations—an amendment that the word four should be omitted was carried by one vote; on the amendment that the word three should be substituted for the blank the voting was equal. The warden gave his casting vote against the amendment, thus leaving a blank. The Faculty, however, recognised that the opposition was too strong and that it could not carry the scheme in its entirety. Accordingly it proposed a conference between delegates from each side. This was agreed to. The delegates met and the Faculty practically conceded the most important points desired by the clinical teachers—viz., three divisions: the first for science and examination towards the end of the first year; the second for anatomy and physiology, with materia medica and pharmacy, and examination at the end of the third year; and the third for pathology, therapeutics, medicine, surgery, obstetrics, and forensic medicine, with examination at the end of the fifth year, except that a terminal examination in general pathology should be held during the fourth year, hospital practice in surgery to begin in the third year, so that surgical practice and part of anatomy would overlap. To this compromise the Senate agreed and the scheme has been approved by the council and will come into force in 1906. It also passed the requirements for the new diploma of public health.

Medical Curriculum in Sydney.

At the last meeting of the Senate of the University of Sydney it was resolved "that it is expedient to establish a diploma of public health," and the resolution was referred to the Faculty of Medicine. The Faculty was also requested to report as to any changes that might be considered desirable in the medical curriculum.

Proposed New Medical Act, Victoria.

A Bill to amend the Medical Practitioners Act of Victoria has been circulated by the Chief Secretary. It proposes that no degrees should be recognised from universities other than the United Kingdom or a British possession unless it appears to the Medical Board that such universities recognise the medical graduates of the University of Melbourne and that Melbourne graduates are permitted to register in the country of the university. In all cases it will be required that an applicant for registration must have had a regular course of medical study of five years or more. A clause is introduced prohibiting any persons but registered medical practitioners (and chemists) from dispensing medicine or rendering to any person medical or surgical aid for fee. The penalty for evading these provisions is fixed at £50. At present no power exists to remove names from the Medical Register. A

clause has been introduced providing for the removal of any person who shall have been guilty of an infamous offence in his profession or other respects. In the exercise of this power the Medical Board is to sit in open court and the accused person can be represented by counsel.

Dental Bill, New South Wales.

A general meeting of dentists, convened by the Dental Association of New South Wales, was held in Sydney to consider the Dentists Act Amending Bill. It was resolved that the meeting approved of the Bill and pledged itself to use its individual and collective efforts to secure the passing of the Bill.

Druggists as Medical Men.

At the last meeting of the Board of Public Health of Victoria the chairman directed attention to a letter from the Medical Defence Association conveying information received from a member as to the action of a druggist. An epidemic of sore-throat had occurred in the district and a number of cases had been visited and treated by the local druggist who said that they were not diphtheria. The medical practitioner was subsequently called in to one of the cases and found that it was diphtheria and the diagnosis was confirmed by bacteriological examination. The medical man had no doubt that the total absence of proper precautions in the early cases accounted for the spread of the disease. The chairman thought some action should be taken. It was resolved to refer the matter to the Board's solicitor to see whether legal action could be taken and to communicate with the Minister of Health to secure an amendment of the Act to meet such cases.

Oysters and Typhoid Fever.

A man was recently fined at the Sydney Water police-court for removing oysters from an area in the harbour which has been prohibited. He was also washing the oysters in a filthy water-hole. The area was prohibited because it is liable to sewage contamination and it was believed that oysters taken from it had been the means of communicating typhoid fever.

St. John Ambulance Association.

The fifteenth annual meeting of the New South Wales branch of the St. John Ambulance Association was a successful gathering. The report stated that 37 classes had been formed and 727 students had been instructed, of whom 542 obtained certificates and 15 qualified for the medallion. During the 15 years 10,223 persons had been instructed in first aid.

Population of New South Wales.

The estimate of population for New South Wales for 1905 shows a probable increase of over 34,000 and if correct this will bring the total population of the State up to 1,500,000. The million was reached in 1887 and the half-million in 1871.

Prevention of Consumption.

The annual report of the New South Wales branch of the National Association for Prevention of Consumption stated that 100,000 leaflets on the prevention of consumption had been printed and were being distributed. The Minister for Public Instruction had at the request of the committee issued instructions that the pamphlet should be regularly read and explained in all public schools. The Board of Health's poster on consumption was being exhibited at railway stations and post-offices. The balance-sheet showed subscriptions received to be £35 and expenditure *nil*, all the expenses having been defrayed by the office-bearers. At the annual meeting resolutions were passed urging the necessity of a hospital for advanced cases of consumption and for compulsory notification of the disease.

Reputed Cure for Consumption.

A large public meeting was held in Sydney on Oct. 20th to consider an alleged cure for consumption. The discoverer said his treatment was an inhalation method and produced patients alleged to have been cured. A motion was passed, with several dissentients, that proof of the efficacy of the cure had been submitted and that capital should be procured to acquire the rights in the cure and to establish sanatoriums.

Nov. 6th.

THE Central Midwives Board has approved of the Chorlton Workhouse Hospital as a recognised place of training for midwives' certificates.

Medical News.

UNIVERSITY OF CAMBRIDGE.—Professor J. B. Bradbury has been appointed an additional examiner in pharmacology, Professor G. Sims Woodhead in pathology, Dr. J. Michell Clarke in medicine, and Mr. G. H. Makins and Mr. W. D. Harmer in surgery, for the Third M.B. Examination. —Mr. H. J. H. Fenton, F.R.S., University lecturer in chemistry, has been approved for the degree of Doctor of Science.—The degree of M.A. *honoris causâ* has been conferred on Mr. R. I. Lynch, curator of the Botanic Garden.—Dr. F. H. H. Guillemard and the Right Hon. Sir G. D. T. Goldie, F.R.S., have been appointed members of the Board of Geographical Studies.—At a Congregation held on Dec. 7th the following medical degrees were conferred:—

M.D.—A. I. Simey, King's; C. H. Miller, Trinity; W. R. Grove, Sidney Sussex.
M.B.—S. H. Daukes, Gonville and Caius.

—Mr. J. A. Crowther, B.A., St. John's, has been elected to a research studentship in natural science offered by Emmanuel College to graduate members of the University.

UNIVERSITY OF LONDON.—At examinations held in October the following candidates satisfied the examiners:—

M.B., B.S. EXAMINATION.

Honours.—*Richard William Allen, Guy's Hospital; *Reginald Henry Miller, St. Mary's Hospital; ‡Percy Strickland Mills, Guy's Hospital; *Robert Milne, London Hospital; §‖Arthur Boniface O'Brien, Guy's Hospital; *John Bart Rous, St. Mary's Hospital; *†‖Donald Platt Sutherland, Victoria University (University medal); §Arthur Denham White, St. Bartholomew's Hospital; and ‖Sidney Rawson Wilson, Victoria University.

* Distinguished in Medicine. † Distinguished in Pathology.
‡ Distinguished in Forensic Medicine and Hygiene.
§ Distinguished in Surgery.
‖ Distinguished in Midwifery and Diseases of Women.

Pass.—George Cuthbert Adeney, St. Thomas's Hospital; Herbert Ainscow, Victoria University; Francis Barlow Ambler, St. Bartholomew's Hospital; Arthur William Baker, Universities of Leeds and Liverpool; Frederic Barker, University of Birmingham; William Henry Barnett, St. Bartholomew's Hospital; John Aaron Berlyn, University of Birmingham; Valentine Henry Blake, St. George's Hospital; William Brown Clark, King's College; Millais Culpin, London Hospital; Delia Davies, London (Royal Free Hospital) School of Medicine for Women; Henry De Vine, King's College and University College, Bristol; Douglas Edward Finlay, Allan Rigden Finn, and Thomas Evans Francis, St. Mary's Hospital; Florence Erin Gubb and Dorothy Christian Hare, London (Royal Free Hospital) School of Medicine for Women; Edward Montague Harrison, Guy's Hospital; Walter Dixon Hartley, Middlesex Hospital; Herbert George Murdoch Henry, University of Sheffield; Cecil Hugh M. Hughes, Westminster Hospital; Hyman Isaacs, St. Mary's Hospital; Alfred Gwilym Jones, Guy's Hospital; Charlotte Alice King, London (Royal Free Hospital) School of Medicine for Women; Stephen March Lawrence, St. Bartholomew's Hospital; Brinley Richard Lloyd, Charing Cross Hospital and University College, Cardiff; Edward Cronin Lowe, Guy's Hospital; Horace Sidney Mataon, St. George's Hospital; Wilfrid Ombler Meek; St. Thomas's Hospital; Edward Farminer Milton, Guy's Hospital; John Hobart Nixon, St. Mary's Hospital; John Morgan O'Meara, University College; Wilfrid James Hussey Pinniger, University College and General Hospital, Bristol; Thomas Phare Puddicombe, St. Thomas's Hospital; Robert Leslie Ridge, London Hospital; Charles Chapman Rushton and Philip Henry Seal, University College; David Lindley Sewell, Victoria University; Frederick Augustus Sharpe and Eric Bellingham Smith, Guy's Hospital; Malcolm William Stewart Smith, University College; Olive Bertha Smith, London (Royal Free Hospital) School of Medicine for Women; George Alick Soltau, London Hospital; Archibald Alfred Sutcliff, St. Thomas's Hospital; Claude Edward Tangye, B.A., University of Birmingham; Herbert Andrew Watney, Guy's Hospital; Edith Waine T. Watts, London (Royal Free Hospital) School of Medicine for Women; and Walter Welchman and Thomas Francis Wilson, Guy's Hospital.

B.S. EXAMINATION (*for Students who graduated in Medicine in or before May, 1904*).

Honours.—M. A. M. Fitzmaurice-Kelly, St. Mary's Hospital (University medal); and Harold Charles Corry Mann, Guy's Hospital.
Pass.—Ruth Levi Bensusan, London (Royal Free Hospital) School of Medicine for Women; Athelstan Jasper Blaxland, University College; Arthur Charles Haslam, M.D., St. Thomas's Hospital; Maurice George Louisson, Guy's Hospital; Ernest Edgar Maples, St. Bartholomew's Hospital; and Charles Derwent Pye-Smith, Guy's Hospital.

SUPPLEMENTARY PASS LIST.

The following candidates have passed in one of the two groups of subjects:—

Group I.—Henry Howarth Bashford, London Hospital; James Francis Blackett, University College, Bristol; Margaret Lucy Augusta Bolleau, London (Royal Free Hospital) School of Medicine for Women; Joseph Bernard Dawson, University of Birmingham; Edward Vincent Dunkley, St. Thomas's Hospital; John Ferguson, St. Bartholomew's Hospital; Frederick William Higgs, St. George's Hospital; James Henry Horton, Guy's Hospital; William Augustine McEnery, University College and Middlesex Hospital; Alfred H. Parkinson, B.Sc., University of Leeds; Theodore Charles Pocock

Guy's Hospital; John Elliott Robinson, St. Bartholomew's Hospital; Bessie Weldon Symington, London (Royal Free Hospital) School of Medicine for Women; and John Benjamin Valentine Watts, University College, Bristol.

Group II.—Thomas Henry Barton, Guy's Hospital; Arthur Beeley, University of Leeds; Frank Cyril H. Bennett, St. Mary's Hospital; Richard John Bentley, Guy's Hospital; Alexander Carruthers Bryson, Westminster Hospital; Thomas Charles Clare, University of Birmingham; Edwin Thomas Harries Davies, St. Mary's Hospital; Charles Noël Davis, St. Bartholomew's Hospital; James Ernest Dunbar, London Hospital; Hugh Roker Evans, University College; Cavendish Fletcher, Westminster Hospital; George Hamilton, Guy's Hospital; Thomas Mellor Hardy, University of Sheffield; Vernon Hetherington, St. George's Hospital; Herbert Stanley Hollis, St. Mary's Hospital; Herbert Stanley Knight, Guy's Hospital; Eleanor Lowry, London (Royal Free Hospital) School of Medicine for Women; Arthur Thomson Marshall, King's College; William Cowper Pickering, St. Bartholomew's Hospital; Alan Randle, University College; Philip Meredith Roberts, University College; Sophia Seekings, London (Royal Free Hospital) School of Medicine for Women; Samuel Henry Sweet, London Hospital; Thomas Turner, Guy's Hospital; Howard Francis Warner, London Hospital; Robert James Waugh, St. Bartholomew's Hospital; and Graham Pallister Young, King's College.

The names of students who have now completed the M.B., B.S. examination do not appear in this list.

N.B.—These lists, published for the convenience of candidates, are issued subject to their approval by the Senate.

RUSSIAN MEDICAL ASSISTANTS' CONGRESS.—According to the *Novoe Vremya* medical assistants and veterinarians of all categories, also field surgeons and accoucheurs, will gather in an all Russian Congress at Moscow on Jan. 15th next to consider the means of improving their condition, the organisation of medical aid for the people, improvement in their education, and other points.

UNIVERSITY COLLEGE, BRISTOL: MEDICAL FACULTY.—Dr. J. Michell Clarke has been elected chairman of the Medical Faculty and Professor of Medicine, *vice* Dr. Markham Skerritt, resigned; Dr. Edward Fawcett has been elected Dean of the Faculty of Medicine, *vice* Dr. Markham Skerritt, resigned; and Dr. P. Watson Williams has been appointed Lecturer on Diseases of the Nose and Throat.—The anatomical department has now been greatly improved; the dissecting room has been enlarged, lighted from the top, redecorated, and refloored, while new tables for dissecting (copies of those in use in the University of Leeds) have been provided. A new block, containing a well-lighted and spacious private laboratory for the professor and a room for the demonstrator, as well as excellent storage rooms, has been built. The whole department is now lighted by electric light. A new building for the teaching and study of bacteriology is also rapidly approaching completion.

LITERARY INTELLIGENCE.—A book is shortly to be issued by the publishing house of J. Rousset of Paris under the editorship of Dr. F. Guermonprez of Lille. It will be in one octavo volume of 1550 pages with 235 figures in the text and the price will be 25 francs. The subject is that of fractures of the limbs. The various chapters of the book are written by different authors and it is stated that the whole book will be a school of treatment of fractures. The history of the different methods of treatment is to be gone into fully and modern methods of treatment such as massage are to be dealt with at length.—The first number of the *Bio-Chemical Journal* will be issued in January next and some of our readers may like to know of its impending appearance. The editors are Professor Benjamin Moore, professor of biochemistry in the University of Liverpool, and Mr. Edward Whitley, so that full and scientific treatment of the many important topics covered by the title of the journal may be confidently expected. No journal dealing exclusively with biochemical problems is at present issued in this country and the increasing attention given to the subject and the number of workers in it seem to call for the appearance of such a publication. We are asked to state that the issue of the journal has been financially guaranteed for a number of years, while contributions are invited dealing "with all portions of the subject of bio-chemistry in its widest sense, both botanical and zoological, including the physical and organic chemistry of the cell and its products, and the effects of reagents upon it; pathological chemistry, the effects of pathological products, and the reaction of the cell to them." It has been obvious to all medical men for some time that no medical journal or magazine could cover this ground and also devote proper space to clinical work and to medical research in its wide sense, but to those engaged in studying the applications of biological chemistry to medicine as well as to economic problems the *Bio-Chemical Journal* will appeal. The journal will be issued monthly, in so far as material is available, so as to insure a rapid publication, and the date at which each communication is received will be stated at the head of the paper. Each volume will consist of about 480 pages, and the subscription will be 15*s.* per volume. Contributors will receive 50 copies of their papers free of charge, and additional copies at cost price. All contributions and subscriptions should be addressed to the editors at the University of Liverpool.

ANNUAL DINNER OF THE MEDICAL GRADUATES' COLLEGE AND POLYCLINIC.—The seventh annual dinner was held on Dec. 8th, at the Trocadéro Restaurant, London, Mr. A. W. Mayo Robson being in the chair. After the loyal toasts had been enthusiastically received and honoured the chairman submitted the toast of "The Polyclinic." He commenced by dwelling on the importance and the imperative necessity of post-graduate study for every qualified practitioner. The naval and military authorities considered it essential that their medical officers should not only attend classes but before obtaining promotion should be examined from time to time as to their fitness for their important duties. In civil practice, however, when once a student had obtained his diploma it rested entirely with him as to whether he again opened a medical book or attended any lectures or hospital. The presence of the Polyclinic in London robbed practitioners residing in or near the metropolis of any excuse for not keeping abreast of the advances continually made in medicine and surgery. He described how post-graduate study had developed in America and declared that London in this respect made a pitiable display beside the great American cities. He gave figures indicating the prosperous condition of the Polyclinic and in the course of his remarks was understood to say that a great deal might be urged in favour of making post-graduate study compulsory for practitioners. This toast was acknowledged by Captain A. E. H. Pinch, the medical superintendent. Dr. C. Theodore Williams proposed "The Guests," which was responded to by Sir R. Douglas Powell, President of the Royal College of Physicians, who declared that if the suggestion made by Mr. Mayo Robson for compulsory post-graduate teaching for practitioners resulted in periodical examinations he would beg leave to retire from the profession. The Director-General of the Army Medical Service, Surgeon-General A. H. Keogh, who also responded to this toast, described how the necessity for an Army Medical College in London had been recognised and had been dealt with by the establishment of such an institution in the metropolis so that the officers of the Royal Army Medical Corps had the opportunity of keeping in touch with medical and surgical work in the hospitals and medical schools of London. Dr. G. Ogilvie was also called upon to speak and he amused the company with some witty stories. The proceedings concluded with the toast of "The Chairman" which was proposed by Mr. J. Cantlie and suitably acknowledged by Mr. Mayo Robson.

AN EXHIBITION OF ELECTRIC APPLIANCES.—A movement that is calculated to bring the consumer into intelligent relations with the producer especially in connexion with electrical supply will receive hearty approval. There are few domestic users of the public electric current who understand anything about it; they know nothing of volts, ampères, or units, and pay their bills in complete ignorance of what they are paying for. Further, they have very little opportunity of satisfying themselves as to the manifold uses to which the electric current as a source not only of light but of heat and general power can be put. We have often suggested in our columns the advantages which would accrue to both producer and consumer if the latter were informed now and again of the recent and economic applications of the current. We are glad to note that at least one electric supply company—namely, the Charing Cross, West-End, and City Electricity Supply Company—is about to adopt the progressive policy indicated. This company have just opened an exhibition at its sub-station, 85, Fenchurch-street, E.C., in which the numerous applications of electricity to lighting, heating, and power may be thoroughly studied and the officials of the company are in attendance to explain any matters on which the consumer seeks practical information. There is a representative display of electric motors applied to a great many processes involving the use of mechanical power. Cooking and heating apparatus is also well illustrated and the consumer may ascertain what a given apparatus

is going to cost him both as to initial outlay and to maintenance and working expenditure. There is thus no longer any reason why he should buy a pig in a poke. All the various ways of lighting are fully illustrated and new arc lamps, new incandescent lamps, as, for example, the tantalum lamp, may be inspected, and all information is volunteered as to their advantages. In addition there are various mechanical contrivances, such as printers' machinery, saws, lifts, polishing machines, pumps, dental apparatus, ozone generators, and so forth. One ozone apparatus is worth particular mention. In this the ozone is generated automatically and the ozone passed through the ordinary water-supply tap, so that the water is sterilised at the point of discharge. It is announced that the exhibition will be open for some time and already many visitors interested in the economic application of the electric current to machinery, cooking, heating, &c., have attended.

THE SURGICAL AID SOCIETY.—The forty-third annual meeting of this society, of which the King is patron, was held at the Mansion House on Dec. 13th under the presidency of the Lord Mayor. The chairman, in opening the proceedings, referred to the long-continued good work of the society and expressed the hope that adequate financial support would always be accorded to it. In moving the adoption of the report, the Bishop of Croydon said the institution was the means of mitigating an incalculable amount of suffering. He had had considerable experience of the valuable surgical aid which it afforded to the sick poor. Mr. Alderman and Sheriff Smallman, who seconded the motion, which was adopted, said that the receipts for the past year—£20,780—showed an increase of about 10 per cent. Sir W. P. Treloar said the society had supplied him with a great many instruments for the fund which he annually raised on behalf of poor cripples. Archdeacon Sinclair pointed out that the appliances provided by the society were expensive and quite beyond the means of the working classes. Since 1862 the society had supplied to the suffering poor 500,000 surgical instruments. The medical staff, he said, practically gave their services voluntarily. Contributions amounting to £490 were received in connexion with the meeting. Before the close of the proceedings the Lord Mayor was elected a vice-president of the society.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.

BLAND-SUTTON, J., F.R.C.S. Eng., has been appointed Surgeon to the Middlesex Hospital.

CLARKE, J. MICHELL, M.D. Cantab., has been appointed Chairman of the Medical Faculty in University College, Bristol, and Professor of Medicine.

CLARKE, SIDNEY H., M.A., M.B., B.C. Cantab., has been appointed Assistant Medical Officer to the Newport Borough Asylum, Caerleon, Mon.

CLUTTERBUCK, L. A., M.B., B.S. Durh., M.R.C.P. Lond., has been appointed Honorary Physician to the St. Marylebone General Dispensary.

EDMUNDS, ARTHUR, M.B., M.S., F.R.C.S. Eng., has been appointed Surgeon in charge of Out-patients at the Great Northern Central Hospital.

FAWCETT, EDWARD, M.B., M.S. Edin., has been appointed Dean of the Faculty of Medicine at University College, Bristol.

HANDLEY, W. SAMPSON, M.S., M.D. Lond., F.R.C.S. Eng., has been appointed Assistant Surgeon to the Middlesex Hospital.

HEATON, CHARLES JAMES, M.R.C.S., L.R.C.P. Lond., has been appointed Honorary Visiting Surgeon to the Royal Sea Bathing Hospital, Margate.

HOBLING, JOHN HENRY, L.S.A., has been appointed Medical Officer and Public Vaccinator for the Hartland District by the Bideford (Devon) Board of Guardians.

MACLACHLAN, J., M.B., M.S. Glasg., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Dornoch District of the county of Sutherland.

PITHIE, A. D., L.R.C.P. & S. Edin., L.F.P.S. Glasg., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Lymington District of the county of Hants.

POCHIN, F. L., M.B., M.S. Edin., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Fakenham District of the county of Norfolk.

RAY, JOHN HOWSON, Ch.M. Vict., F.R.C.S. Eng., has been appointed Honorary Assistant Surgeon to the Manchester Royal Infirmary.

WILLIAMS, P. WATSON, M.D. Lond., has been appointed Lecturer on Diseases of the Nose and Throat at University College, Bristol.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BANGOR, CARNARVONSHIRE AND ANGLESEY INFIRMARY.—House Surgeon. Salary £80 per annum, with board, washing, and lodging.

BRISTOL ROYAL INFIRMARY.—Pathologist, Bacteriologist, and Director of Clinical Laboratories. Salary £250 per annum. Also Medical Registrar and Surgical Registrar.

BRISTOL, UNIVERSITY COLLEGE, FACULTY OF MEDICINE.—Professor of Pathology.

CAMBRIDGE, BOROUGH OF.—Medical Officer of Health. Salary £450 per annum.

CARDIFF INFIRMARY.—Resident Medical Officer. Salary £120 per annum, with board, washing, and apartments.

CHELSEA HOSPITAL FOR WOMEN, Fulham-road, S.W.—Resident Medical Officer, unmarried. Salary £80 per annum.

EASTERN DISPENSARY, Leman-street, Whitechapel.—Resident Medical Officer. Salary £120 per annum.

EAST LONDON HOSPITAL FOR CHILDREN AND DISPENSARY FOR WOMEN, Shadwell, E.—House Physician for six months. Honorarium of £25, with board, residence, laundry, &c.

GLASGOW EYE INFIRMARY.—Pathologist and Bacteriologist. Salary £80.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, London, W.C.—House Surgeon, unmarried, for six months. Salary £20, with board and residence. Also Assistant Surgeon. Also non-resident Casualty Medical Officer. Salary £200 per annum, with lunch.

ITALIAN HOSPITAL, Queen-square, London, W.C.—House Surgeon for six months, renewable. Salary £60 per annum, with board and residence.

LABORATORIES OF PATHOLOGY AND PUBLIC HEALTH, 62, Queen Anne-street, London, W.—Microscopist. Salary £150, rising to £300.

LIVERPOOL INFIRMARY FOR CHILDREN.—Assistant House Surgeon for six months. Salary £25, with board and lodging.

LONDON THROAT HOSPITAL, 204, Great Portland-street, W.—Honorary Anæsthetist.

MARGATE, ROYAL SEA BATHING HOSPITAL.—Honorary Assistant Visiting Surgeon.

NEW HOSPITAL FOR WOMEN, Euston-road.—Clinical Assistants (female).

NORTHAMPTON GENERAL HOSPITAL.—House Physician, unmarried. Salary £100 a year, with apartments, board, washing, and attendance. Also Honorary Assistant Surgeon.

NOTTINGHAM GENERAL DISPENSARY.—Assistant Resident Surgeon, unmarried. Salary £160 per annum, with apartments, attendance, light, and fuel.

NOTTINGHAM GENERAL HOSPITAL.—Assistant House Surgeon. Salary £100 a year, with board, lodging, and washing.

ROYAL LONDON OPHTHALMIC HOSPITAL, City-road, E.C.—Refraction Assistants. Salary £25 a year, with lunch.

RYDE, ROYAL ISLE OF WIGHT COUNTY HOSPITAL.—Resident House Surgeon. Salary £90.

SALFORD ROYAL HOSPITAL.—Senior House Surgeon, House Physician, and Junior House Surgeon, all for six months. Salaries at rate of £110, £100, and £90 respectively, with board and residence.

SEAMEN'S HOSPITAL SOCIETY, Greenwich.—Two Assistant Physicians and One Assistant Physician or Surgeon for Diseases of the Throat, Nose, and Ears.

TOTTENHAM HOSPITAL, London, N.—Honorary Surgical Registrar.

UNIVERSITY OF LONDON.—Professor of Protozoology. Salary £700 per annum.

WAKEFIELD, WEST RIDING ASYLUM.—Pathologist and Assistant Medical Officer. Salary £140, rising to £160, with apartments, board, washing, and attendance.

THE Chief Inspector of Factories, Home Office, S.W., gives notice of a vacancy as Certifying Surgeon under the Factory and Workshop Act at Battle, in the county of Sussex.

Births, Marriages, and Deaths.

BIRTHS.

GOSSAGE.—On Dec. 6th, at Upper Berkeley-street, W., the wife of Alfred M. Gossage, M.B., F.R.C.P., of a son.

MCCULLOCH.—On Dec. 10th, at West-park, Bitham, the wife of Major T. McCulloch, R.A.M.C., of a son.

MARRIAGES.

DAVIES—GASCOINE.—On Dec. 2nd, 1905, at St. George's, Tufnell Park, by the Rev. George Edward Asker, Charles Spurgeon Davies, Physician, 62, St. James's-road, West Croydon, and Charlottetown, Canada, to Helena Rose (Daisy), youngest daughter of Alexander Gascoine, Tufnell Park. No cards. Canadian papers, please copy.

GUTHRIE—ROBINSON.—On Dec. 5th, at Holy Trinity Church, Roehampton, by the Rev. W. Emery Barnes, D.D., uncle of the bride, assisted by the Rev. A. de H. Robinson, brother of the bride, and the Rev. Robert Carrington, vicar of Holy Trinity Church, Roehampton, Thomas Guthrie, M.B., F.R.C.S. Eng., eldest son of Alexander Guthrie of Mossley Hill, Liverpool, to Winifred Amy de Horne, eldest daughter of John William Robinson, of Denham Lodge, Putney Hill, London.

DEATH.

RANKIN.—At Springfield Villa, Dundonald-road, Kilmarnock, on the 28th ult., Dr. James Rankin, in his 75th year.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

SPITTING AND CONSUMPTION.

THE Great Eastern Railway Company has just placarded Liverpool-street station with large posters of which the wording is as follows:—

> Great Eastern Railway.—Prevention of Consumption.—To aid in the prevention of consumption, and in their own interests, all persons are earnestly requested not to spit on the floor of any vehicle, railway station, or other public resort. Penalty under by-law, first offence £2; each subsequent offence £5.—J. F. S. Gooday, General Manager. London, October, 1905.

This railway company has had a succession of notices concerning spitting and the above notice is yet another step in the progression. The previous notices will be found detailed in THE LANCET of March 18th, 1905, p. 761, where there also appeared the reproduction of a notice issued by the London County Council respecting spitting. It will be seen on referring to this latter that "Any person who shall offend against this by-law shall be liable for each offence to a fine not exceeding 40s." It will be further observed in the same notice that the fine relates to offences committed in, among other places, "any public carriage" and "public waiting-room," so that, whereas the fine for each offence under the London County Council by-law is "not exceeding 40s.," the fine under the railway company's by-law would appear to be at least £2, and for each subsequent offence £5. On referring to the by-laws and regulations made by the company with the approval of the Board of Trade and published in the company's time table we find that the following appears in the category:—

> 22. No person shall spit upon the floor or upon any part of any carriage using or being on the railway, or upon the platform at any station of the company, or upon the floor, side, or wall of any hall, office, waiting-room, refreshment-room, public-room, or public passage at any station of the company. Any person infringing or not observing this by-law and regulation shall be liable to the penalty prescribed by Bye-law No. 1, and in case of non-compliance with the request of any servant or agent of the company to desist, may, without prejudice to any such penalty, be forthwith removed from the company's premises by or under the direction of any such servant or agent.

By-law No. 1 relating to the penalties is as follows:—

> 1. Any person doing anything prohibited by or otherwise offending against any of the following by-laws and regulations numbered 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 16, 18, 19, 20, 21, and 22 respectively shall be liable for every such offence to a penalty not exceeding forty shillings for the first offence, and not exceeding £5 for any subsequent offence; and any person doing anything prohibited by or otherwise offending against either of the following by-laws and regulations numbered 15 and 17 respectively shall be liable for every such offence to a penalty not exceeding £5.

From this it will be seen that the penalty is "not exceeding forty shillings for the first offence, and not exceeding £5 for any subsequent offence." The words "not exceeding" which have been omitted from the warning posters bring the regulation more into line with the London County Council by-law, although by that by-law the fine for each offence is "not exceeding forty shillings."

THE LONDON TEMPERANCE HOSPITAL AND TEMPERANCE STATISTICS.

To the Editors of THE LANCET.

SIRS,—I am sorry Dr. Dawson Burns should be so angry with me for daring to disagree with him and still more do I regret that he should in consequence consider and state that I am not a gentleman. By so doing, however, he relieves me from the necessity of sustaining my reference to his "paucity of argument." I note that I am in the habit of indulging in "groundless vituperation, misconduct, disingenuous misrepresentation, and monstrous caricature," a very fair amount of invective, and all in one letter! My misconduct apparently consists in having suggested that it was somewhat egotistical on the part of the authorities of the London Temperance Hospital to insist on the great influence of their teaching on the progress of medicine and dietetics and on the practice of the big general hospitals. With your permission I will make one or two quotations in support of my suggestion:—

> "Since then (1871) medical thought and progress have been moving in the direction of the London Temperance Hospital. For this we are thankful and hopeful."—Dr. Dawson Burns, THE LANCET, Nov. 11th.
>
> "Since that date the use of alcohol in the great general hospitals has diminished one-half. ..... *Our institution is especially intended for the information of the medical profession* and the encouragement of a similar method of treatment by doctors who wish to be guided by facts and not by fads."—Dr. Dawson Burns, *Standard*, July, 1905.
>
> "The London Temperance Hospital was founded with the object of discouraging the use of alcohol in the treatment of disease and of furnishing *trustworthy* evidence of its use and disuse (sic). The wisdom and foresight of the founders has been amply justified by the change which has taken place with regard to the use of alcohol in other hospitals during the past 20 years."—Dr. H. J. Paterson, *Standard*.

I asked for information of a scientific character and I receive invective and as I cannot hope to cope with Dr. Dawson Burns in his special branch of dialectics I have now done with this correspondence.

I am, Sirs, yours faithfully,

Dec. 8th, 1905. A. H. COPEMAN.

FILTHY ADVERTISEMENTS.

To the Editors of THE LANCET.

SIRS,—I am very glad to see that your paper has taken up the question of "Filthy Advertisements" and have read the article on p. 1496 in THE LANCET of Nov. 18th. If the British race is not to die out this sort of thing must be stopped. Will no Member of Parliament bring in a Bill making such advertisements criminal? If there is a high class of workmen in the United Kingdom it is those for whom the inclosed weekly journal is printed, mostly very intelligent and thrifty and obliged to be sober owing to their particular employment, and it is to the notice of this class that these advertisements are brought—the class which the country requires to increase and multiply, strong in physique and intellect. In 1900 I purchased a copy of the paper and noticing the class of advertisements I wrote to the editor, who never even had the politeness to answer my letter. In 1901 Lord Aberdeen sent me an appeal for the Purity Society. I replied that I should not send anything, as the society did not do what it ought to in suppressing this class of advertisement. I do not know what took place between the society and the editor of the paper, but the editor wrote to me 12 months after my first communication promising that these advertisements should be stopped. As you will observe from the inclosed they are as bad as ever four years after his promise. Moses spoke the truth when he told the Children of Israel: "For all these abominations have the men of the land done, which were before you, and the land is defiled; that the land spue not you out also, when ye defile it, as it spued out the nations that were before you." Which in other words meant the decay of the race.

I am, Sirs, yours faithfully,

Dec. 3rd, 1905. ALPHA.

*** "The inclosed weekly journal" is the *Railway Review* of Dec. 1st, 1905. This journal is, according to a press directory, the official organ of the Amalgamated Society of Railway Servants, and of this society Mr. Richard Bell, M.P., is the general secretary. We must say that the advertisements referred to by our correspondent are such as no journal with any claim to respectability ought to publish. They appear on pages 15 and 16 of the issue before us and are absolutely shameless. Thus, Messrs. Constantine and Jackson advertise a "New Illustrated and Descriptive Price List of Malthusian and other Rubber Surgical and Domestic Appliances, sent post free. Samples of four varieties of Malthusian Appliances and Presentation Copy of Wife's Handbook sent on receipt of twelve stamps." Further, M.D., 217, Graham-road, London, N.E., says: "English wives should at once send for Treatise Special and Price List of Surgical Appliances advised by the Medical Faculty throughout the World." This is a particularly wicked advertisement, owing to the use of the letters M.D., which are calculated to make the unwary believe that the advertiser is a medical practitioner. Moreover, the remark about the medical faculty is an untruth. Other disgraceful advertisements are one from T. Vimule, Dalston-lane, London, N.E., headed "A Book for Wives," and one from the Red Lion Pharmacy, Holborn, which also calls attention to "Henry Paterson's Illustrated Price List of Rubber Appliances and a Wife's Handbook." We do not know who is the editor of the *Railway Review*, but we consider that Mr. Bell should see to it that his official organ should no longer be defiled with dirt such as we have quoted.—ED. L.

PERSONATION.

To the Editors of THE LANCET.

SIRS,—In regard to the question of personation I know a story so extraordinary that I have often thought that you ought to have it and it now seems *à propos*. The chief actors must all be dead but I will change the names of the persons and locality. At the same time I send you in a private covering letter the actual names of the parties with a reference to a gentleman well known to you personally.

In the year 1872 there was practising in Gloucester a Dr. George Halkett, with a partner, Mr. Alfred Darcy. I was assistant to the firm, so that I was consulted about the whole matter. Mr. Darcy was a man of aristocratic appearance and was said to be the natural son of the Earl of Torquay. He had a brother named Arthur Darcy who had been a medical student but had never qualified and had gone out to Hong-Kong. Arthur was as unsteady as Alfred was otherwise but he was his mother's favourite. In fact, she held no communication with Alfred. The latter fell ill of enteric fever and died. Shortly afterwards Mrs. Alfred heard from his mother for the first time. She had been so much distressed at the news of her dear son's death and did Mrs. Alfred know, she had *never* seen his diploma? Would Mrs. Alfred kindly send it for her to see? She would return it promptly. Mrs. Alfred consulted her father over this strange letter and eventually the diploma was posted to the disconsolate mother. A few days afterwards came a letter to say that Mrs. Darcy, sen., had been so much overcome by the perusal of her dear son's diploma that she had had a fit and the diploma had fallen into the fire and been consumed. Mrs. Alfred's

father promptly replied that he did not believe the story and that if the diploma was not returned by the next post he would take proceedings. The diploma was then returned and one could see that, while rolled up, it had been held to a candle so that there were half a dozen circular pieces destroyed. The explanation was obvious. The initials of the brothers were the same and by signing "A. Darcy" Arthur could practise on his dead brother's diploma.

I am, Sirs, yours faithfully,

Dec. 11th, 1905. J. B. E.

THE PROSTITUTION OF THE POST OFFICE.

IN THE LANCET of Nov. 4th we had the pleasure of informing our readers that a quack trading under the name of "Dr. Bell" had at last been successfully prosecuted for sending filthy circulars through the post. We have now received from a correspondent in Bombay a circular and paper of loathsome questions designed to frighten the recipient and to induce him to buy an "electrical appliance." These documents are issued by a person calling himself Dr. A. T. Sanden and the particular ones before us were sent to a medical student in India. The covering letter is one of the usual "follow up" kind, in which the modern quack deals so largely and states that Sanden takes an "individual interest in each and every case until cure is effected." As, according to the heading of the letter, he has branches in most parts of the United States, in Paris, in London, and in Bombay, it will be seen that his promise of individual attention to every case is impossible of performance. The paper of questions contains those common to all sexual quacks. Possibly the Indian postal authorities will think it worth while to prosecute Sanden or the person responsible for the prostitution of the post office by the sending of these misleading and filthy documents.

"AN INSURANCE COMPANY'S ADVERTISEMENT."

"O. F. F." sends us a postcard which he has received from an insurance company, which begins as follows: "Shocking weather, isn't it, and a lot of sickness about? The worst of it is that illness means increased expense and loss of business." Then follows an invitation to take out a policy. Like ourselves, he is a little puzzled to know in what way "a lot of sickness about" means loss of business to a medical man. Probably the insurance company meant that the medical man when ill would lose his business and that his expenses would increase. But the conducting of a medical practice is a most expensive affair and there is not a practitioner in the kingdom who would not substantially decrease his expenditure by ceasing to attend his patients, although, of course, his receipts would go down in proportion. The public quite fails to understand how heavy the expenses of the medical practitioner are. It looks solely at the gross receipts. That is why we find an epidemic, say, of measles to be generally considered by the public as a good thing for the medical man, whereas he is frequently a loser in such circumstances. This cannot be the kind of risk which the insurance company would have "O. F. F." transfer to a company because "loss of business" is expressly mentioned.

THE SCIENCE OF ADVERTISEMENT.

IN our issue of Nov. 25th we drew attention, under the above heading, to some misleading statements made in an advertisement issued by a quack institution called the Bristol Electropathic Institute. The advertisement in question appeared in the *Western Daily Press* of Nov. 16th and a somewhat similar one in the *Bristol Evening News* of Nov. 25th. In these two advertisements Dr. G. R. Murray's name was used so as to make it appear that he recommended the quack treatment in question. In the *Bristol Times and Mirror* of Nov. 22nd there appeared another advertisement from the same source in which the name of Dr. H. Lewis Jones was also used in the same deceitful fashion as that of Dr. Murray. Such gross liberties could not be tolerated and the two medical men in question have therefore through the Medical Defence Union exacted an apology and an undertaking from the Bristol Electropathic Institute that in future advertisements no reference shall be made to either of their names or to the name of any other registered medical practitioner. We must repeat that which we have already said about the *Western Daily Press*, in so far as it refers to the other Bristol journals concerned, and that is that we cannot understand how any respectable journal can take money from such a tainted source as the Bristol Electropathic Institute. But we suppose that the proprietors would explain our wonder by remarking as did Vespasian concerning the tax raised upon urine by saying of the money—*Non olet.*

MOTOR-CARS FOR MEDICAL MEN.

To the Editors of THE LANCET.

SIRS,—In reply to "Mechanical," my experience with one of the Rover Company's hundred guinea cars may be of interest.

I have now run my car about 1500 miles and have reason to be more than satisfied with its behaviour. The engine is simple, easy to look after, and perfectly made. The carriage work is good and the lightness of the whole machine (about 7 cwt.) makes it a faster car on the level and on hills than many another of equal horse power. The clutch, carburettor, and transmission gear are particularly good features. The worst feature of the car to my mind is the combined control, but to anyone who is totally ignorant of motor driving, or is an absolute novice, this would probably be a useful simplification. The petrol consumption is wonderfully low and in my case has equalled about 25 miles to the gallon with two up. I have ridden a motor cycle for two seasons and though it was of a well-known make it gave me in every 150 miles quite as much trouble as my little Rover has in 1500. I consider that any practitioner who cannot afford £200 for a car could not do better than invest in one of these excellent little vehicles. They are wonderful value.

I am, Sirs, yours faithfully,

Dec. 4th, 1905. HIGHLANDS.

GEORGE BROWN TESTIMONIAL FUND.

THE following is the first list of subscribers to this fund which has been sent to us by the honorary secretary and treasurer, Dr. J. Pollock Simpson:—

	£	s.	d.
Dr. F. Spicer	1	1	0
Messrs. Ingram and Royle, Limited	1	1	0
Dr. Arthur Hill	1	1	0
Foods, Limited	0	10	6
Dr. Hugh Bennett ...	1	1	0
Dr. G. Danford Thomas	2	0	0
Dr. John Brown	2	2	0
Dr. J. T. Churchill ...	1	1	0
Mr. C. R. B. Keetley ...	1	1	0
Dr. A. E. Larking ...	0	10	6
Mr. P. Mehan McDermott	1	1	0
Dr. A. Percy Allan ...	1	1	0
Mr. Clement H. Sers ...	1	1	0
Dr. David Walsh	1	1	0
Dr. Colin Campbell ...	0	10	6
Mr. H. W. Kiallmark ...	0	10	6
Dr. T. Carlyle Beatty ...	0	10	0
Dr. Thos. M. Watts... ...	0	5	0
Mr. M. Cursham Corner	0	10	6
Mr. C. G. C. Scudamore...	1	1	0
Dr. F. Lowe	0	10	6
Dr. J. Pickett	0	10	6
Dr. Cock	0	10	6
Dr. Lennox Wainwright	1	1	0
Dr. W. G. Dickinson ...	0	10	6
A. K.	0	2	6
Anon.	0	5	0

L.R.C.S.I. asks for an opinion in the following circumstances. He had agreed to conduct an accouchement upon a woman for whom he had twice discharged the same service at the previous fee of two guineas. The patient's husband having died she was obliged to go to her father's house, three miles or so from the medical man's residence. There her confinement came on suddenly and the medical man of the district who had already attended her father was called in. But the future visits and attention were supplied by her own medical man who asks us the following question:—Would not the fair proceeding be that the agreed fee of two guineas should be divided between the two medical men? It seems that the local practitioner states that his fee is three guineas and that he will accept nothing less than two guineas as his share. The answer to this question, as to most similar questions, is that there can be no immutable law, and the circumstances of the patient seem to us to dictate the proper course. Her contract for two guineas could not be carried out, and although this was not her fault it certainly was not the fault of anybody else. The second medical man might have refused to attend her for a less sum than three guineas, but this chance was not offered to him. If the patient is in circumstances making the extra guinea of no grave consequence to her we think she should pay it. It is hard on her that her sudden confinement should entail expense upon her, but life is full of such chances. If, on the other hand, the patient and her father are really poor we think the local practitioner might well consent to halve the two-guinea fee with the patient's medical man.

X. Y. Z.—We know nothing of the "cure" in question. Also we have no evidence that the much advertised medical man is a party to the dissemination of the paragraphs.

L. T.—The condition is not in the least dangerous and no special medical opinion is required save in deference to the wishes of the family medical adviser.

R. G. P.—No home offering the advantages required could possibly be maintained save by private and open-handed charity.

Hampden Club.—We do not know the passage which bears such an interpretation.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Dec. 14th, 1905.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radia in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks
Dec. 8	29·98	W.	0·10	58	54	53	53	53	Raining
,, 9	30·20	W.	0·14	66	50	40	41	42	Cloudy
,, 10	30·67	W.	...	43	43	37	37	37	Fine
,, 11	30·73	W.	...	65	45	36	37	38	Foggy
,, 12	30·82	W.	...	48	47	31	33	34	Foggy
,, 13	30·73	N.W.	...	49	46	34	39	40	Cloudy
,, 14	30·54	N.	...	48	47	40	45	46	Foggy

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (18th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (3 P.M.).

TUESDAY (19th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Central London Throat and Ear (2 P.M.), Children, Gt. Ormond-street (2 P.M., Ophthalmic, 2.15 P.M.).

WEDNESDAY (20th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), West-minster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Royal Orthopædic (3 P.M.), Children, Gt. Ormond-street (9.30 A.M., Dental, 2 P.M.).

THURSDAY (21st).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), St. Mark's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Orthopædic (9 A.M.), Royal Ear (2 P.M.), Children, Gt. Ormond street (2.30 P.M.).

FRIDAY (22nd).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), City Orthopædic (2.30 P.M.), Soho-square (2 P.M.), Central London Throat and Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.).

SATURDAY (23rd).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St Mary's (10 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9.30 A.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

TUESDAY (19th).—CHELSEA CLINICAL SOCIETY (Chelsea Dispensary Manor-street, King's-road, S.W.).—8 P.M. Exhibits. 8.50 P.M. Communications:—Dr. W. Ewart: Steps in the Evolution of Serous Pleurisy, with special reference to Intra-serous Injections.—Dr. H. Hilliard: Ethyl Chloride and Chloroform Mixture as a Substitute for Pure Chloroform.

THERAPEUTICAL SOCIETY (Apothecaries' Hall, Blackfriars).—4.30 P.M. Papers:—Mr. H. W. Gadd: The Chemistry and Pharmacy of the Leaves of Viola Odorata.—Dr. W. Bain: On Cholelithiasis and its Medical Treatment.

ROYAL STATISTICAL SOCIETY (9, Adelphi-terrace, Strand, W.C.).—5 P.M. Papers:—Dr. A. Newsholme and Dr. T. H. C. Stevenson: The Decline of Human Fertility in the United Kingdom and Other Countries as shown by Corrected Birth-rates.—Mr. G. U. Yule: Changes in the Marriage- and Birth-rates in England and Wales during the Past Half-century, with an Inquiry as to their Probable Causes.

PATHOLOGICAL SOCIETY OF LONDON (20, Hanover-square, W.).—8.30 P.M. Experimental Pathology Meeting.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MONDAY (18th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. T. C. Fox: Clinique. (Skin.) 5.15 P.M. Mr. T. Walker: Frequency of Micturition.

TUESDAY (19th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. J. Taylor: Clinique. (Medical.) 5.15 P.M. Dr. S. Taylor: Acute Pneumonia.

WEDNESDAY (20th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. P. L. Mummery: Clinique. (Surgical.) 5.15 P.M. Mr. H. L. Barnard: Diseases of the Gall-bladder and Bile-ducts.

NORTH-EAST LONDON POST-GRADUATE COLLEGE (Tottenham Hospital, N.).—4.30 P.M. Lecture:—Dr. G. Newman: Disinfection Methods for Practitioners.

THURSDAY (21st).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. Hutchinson: Clinique. (Surgical.)

HOSPITAL FOR SICK CHILDREN (Gt. Ormond-street, W.C.).—4 P.M. Lecture:—Dr. Voelcker: Rheumatism in Childhood.

MOUNT VERNON HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST (7, Fitzroy-square, W.).—5 P.M. Lecture:—Dr. H. Scharlieb: Some After-effects of Anæsthetics. (Post-Graduate Course.)

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